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JOURNAL OF EDUCATIONAL RESEARCH

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JOURNAL *of* EDUCATIONAL RESEARCH

Volume XXXI MARCH, 1938 Number 7

SUPERSTITIONS OF JUNIOR HIGH SCHOOL PUPILS

Part II. Effect of Instruction on Superstitious Beliefs[1]

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THE purpose of the second part of this study was to determine to what degree the superstitious beliefs of junior high school pupils may be reduced by a course in general science which is definitely directed toward the elimination of superstitions. The following problems have been considered: 1. What is the efficacy of general science in reducing children's superstitions when no emphasis is placed on this? 2. What changes are there in the number of superstitious beliefs held by children following a course in general science directed toward eliminating superstitions? 3. What changes occur in the emotional adjustment of the children following the special instruction?

Methods of Instruction.—The methods of instruction employed were based upon the assumption that a superstitious attitude indicates lack of ability to sense cause and effect relationships and is, therefore, the exact opposite of a scientific attitude. Scientific attitudes necessitate habits of clear thinking, open-mindedness, careful observation of data, suspended judgment, criticism, weighing of evidence and a search for true cause and effect relationships.[2] Belief in superstitions involves the opposite of each of these. An attempt was therefore made to develop an extremely simple and logical set of questions which would emphasize

[1] Part I of this study, "Incidence and Relation to Emotional Maladjustment," *Journal of Educational Research*, XXXI (February, 1938), pp. 435-446.

[2] Noll, Victor H. "The Habit of Scientific Thinking," *Teachers College Record*, XXV (1933), pp. 1-9.

Dresslar, F. B. "Suggestions on the Psychology of Superstitions," *American Journal of Insanity*, LXVII (1910), pp. 213-226.

these points and would serve as a guide in problem solving.[3] The following are the six questions used by the pupils in solving problems throughout the period of instruction.

1. *What do you want to find out?*
2. *What have you ever experienced, heard, or read about this?*
3. *What do you think the answer is?*
4. *What plan can you make for testing the truth of your answer?*
5. *What facts have you found?*
6. *Considering all these facts, what do you now feel is the correct answer to your problem?*

Answering these six questions required the child to state his problem, recall past experiences, form an hypothesis, make a workable plan, search for facts, and weigh his evidence with respect to its pertinence, soundness and adequacy. It necessitated conscious consideration of cause and effect relationships. The questions were mimeographed with spaces for writing between questions. Each child was supplied with his own sheet for every problem dealt with during the semester whether it was a superstition or a problem in the regular science work.

The presentation of a problem was usually in the form of a paragraph, a picture, or a combination of the two. For example, the following was used in the study of diseases:

> Diphtheria is an ever present menace to the life and health of a child. An average of twenty-two children died every day from diphtheria in the United States during 1928. In New York City a child dies every day from this disease.

At the beginning of the semester the statement of the problem was developed by the entire group working together. Later this was not necessary and each individual developed his own. Many, of course, needed assistance throughout the semester.

Questions 2 and 3 of the outline were answered individually and were then followed by class discussion. Question 4, dealing with the formation of a plan, was first answered individually. Then through class

[3] Other studies dealing with methods of overcoming superstitions are:

Caldwell, O. W., and Lundeen, G. E. *An Experimental Study of Superstitions and Other Unfounded Beliefs*, New York City: Bureau of Publications, Teachers College, Columbia University, 1932.

Caldwell, O. W., and Lundeen, G. E. "Changing Unfounded Beliefs—A Unit in Biology," *School Science and Mathematics*, XXXIII (1933), pp. 394-413.

Noll, V. H. "Teaching the Habit of Scientific Thinking," *Teachers College Record*, XXV (1933), pp. 202-212.

Smith, V. C. "Science Methods and Superstitions," *School and Society*, XXXI (January, 1930), pp. 66-68.

discussion one plan of procedure was determined upon. Special methods could be used by all who were interested, in addition to the class plan. The gathering of data and the formulation of what the child considered the correct answer was an individual piece of work. Discussion of the entire problem by the class followed the completion of the sixth step.

The direct attack on superstitions was divided into two types of work, trial, and discussion. A superstition that was to be tried out in class was presented in a form similar to that of the regular science problems. For example, the following statement served as the starting point for one unit: If you walk under a ladder, you will have bad luck. The problem was, of course: Is it true that if you walk under a ladder you will have bad luck? Outline questions 2 and 3 were followed as usual, but determining the answer called for trial and observation of the results. Groups of pupils in each class, usually 8 or 10, actually walked under a ladder which had been brought into the room. These pupils reported at following class meetings all the unpleasant things that had happened to them for which they could not account. Those for which reasons could be found were not in the "bad luck" class. These were then discussed and possible reasons brought forth which might account for the disagreeable happenings. At the end of several weeks conclusions were drawn by all the pupils as to the truth of the given superstition. Four other superstitions tried out by the entire group were the groundhog's ability as a weather prophet, opening an umbrella indoors, breaking a mirror, and the danger of the number 13.

Later in the semester each class was divided into groups of five or six members, each group selecting one of the following superstitions to investigate: removing a ring from a friend's finger, putting on the left shoe first, the number seven, sleeping with a book under your pillow, carrying a gift penny, the wealth of people with hairy arms, changing of horse hairs into worms, wishing on the first star, and singing before breakfast. The procedure was the same as before. Discusison of ten other superstitions, without any trial, was carried on at different times throughout the term.

At the end of the semester the 285 ninth grade pupils who had spent two hours each week following the special method of instruction were retested with the following: Maller and Lundeen superstition test, Zapf superstition test, and Woodworth Mathews Personal Data Sheet.[4]

Effect of Science Instruction without Emphasis on Superstitions.—In order to determine whether the special instruction was more effective

[4] The tests used were described in Part I of this study.

in reducing belief in superstitions than regular general science classroom work, it was necessary to find the effect of this work carried on without any special emphasis on superstitions. Since it was impracticable to run a control group at the same time as the experimental group because of the carryover of both materials and ideas from the experimental to the control, the following method was used with 546 pupils who had taken the Maller and Lundeen superstition test. The scores were grouped according to the number of semesters of general science work the pupils had had previous to the experiment, and averages of the scores in each group were determined. The results of this are given in Table X.

TABLE X

MEAN NUMBER OF SUPERSTITIONS BELIEVED BY 546 PUPILS HAVING HAD DIFFERENT AMOUNTS OF GENERAL SCIENCE WORK

Number of Semesters	Number of Cases	Mean of Superstitions
1	183	9.58
2	17	10.00
3	74	10.99
4	195	9.86
5	77	9.64

From this it can be seen that the science work, in itself, was not effective in developing scientific attitudes and reducing superstitions.[5] Even

TABLE XI

COMPARISON OF MEAN SCORES AND STANDARD DEVIATIONS ON SUPERSTITION TESTS GIVEN IN JANUARY AND MAY, 1935

	January		May		Difference in Means
			Maller and Lundeen Test		
	Mean	S. D.	Mean	S. D.	
Boys	7.23	7.49	2.99	3.69	4.24
Girls	10.85	8.99	5.04	5.95	5.81
Total	9.21	8.53	4.11	5.15	5.10
			Zapf Superstition Test—True Scores		
	Mean	S. D.	Mean	S. D.	
Boys	14.46	15.12	5.66	5.82	8.81
Girls	19.11	17.62	7.47	9.32	11.64
Total	17.01	16.70	6.65	7.98	10.36

[5] The four teachers who had taught these pupils had given no definite instruction in scientific methods of thinking and problem solving. All, however, felt that they had incorporated these ideas into their teaching in an indirect way.

after five semesters of dealing with scientific materials and ideas the mean number of superstitions believed was practically the same as it was for pupils who had had only one semester.

Superstition Tests.—Repetition of both the Maller and Lundeen and the Zapf superstition tests following the period of instruction showed decided decreases in the average number of beliefs acknowledged by the pupils who had spent the intervening time following the special method. These averages, together with the initial figures are given in Table XI.

TABLE XII

COMPARISON OF DECREASE IN BELIEF IN IDENTICAL ITEMS ON MALLER AND LUNDEEN AND ZAPF SUPERSTITION TESTS AFTER INSTRUCTION

	Maller and Lundeen				Zapf—True Scores			
Items*	Jan.	May	Diff.	% Decrease	Jan.	May	Diff.	% Decrease
3	78	29	49	62.8	12	5	7	58.3
4	76	40	36	47.3	36	12	24	66.6
5	21	8	13	61.9	13	2	11	84.6
6	68	29	39	57.3	8	1	7	87.5
7	117	39	78	66.6	89	32	57	64.0
8	115	17	98	85.2	111	15	96	86.4
10	62	11	51	82.2	80	10	70	87.5
13	4	4	0	0.0	21	6	15	71.4
14	27	9	18	66.6	18	3	15	83.3
16	19	5	14	73.6	14	4	10	71.4
17	65	52	13	20.0	37	13	24	64.8
18	48	6	42	87.5	12	1	11	91.6
19	115	80	35	30.4	111	57	54	48.6
20	103	57	46	44.6	67	42	25	37.3
23	54	44	10	18.5	43	19	24	55.8
25	94	38	56	59.5	52	9	43	82.6
26	128	70	58	45.1	69	13	56	81.1
27	58	39	19	32.7	19	3	16	84.2
28	59	33	26	44.0	48	11	37	77.0
29	33	7	26	78.7	40	3	37	92.5
31	46	17	29	63.0	47	12	35	74.4
34	8	5	3	37.5	33	5	28	84.8
36	79	52	27	34.1	58	20	38	65.5
37	88	41	47	53.4	82	17	65	79.2
38	101	38	63	62.3	153	80	73	47.7
39	25	9	16	64.0	28	13	15	53.5
42	37	10	27	72.9	42	6	36	85.7
44	40	19	21	52.5	58	12	46	79.3
45	30	10	20	66.6	17	7	10	58.8
48	75	30	45	60.0	74	13	61	82.4
49	15	4	11	73.3	18	3	15	83.3
50	20	4	16	80.0	23	3	20	86.9
Mean				55.8				71.9

*Items numbered as on test.

The average decrease in superstitious beliefs as shown by the Maller and Lundeen test was 5.10. On the Zapf test the average decrease was 10.36. Girls still had larger average scores than boys, but in both tests the average loss for girls was greater than that for boys.[6]

Tables indicating the initial and final percentages of children showing belief in each superstition on both tests are given in the Appendix. A comparison of the number of children expressing belief in the 32 items which were identical on the two superstition tests before and after the period of instruction is given in Table XII. The percentage decrease for each superstition is also indicated. The mean percentage of decrease in these 32 items was 71.9 percent on the Zapf test and 55.8 percent on the Maller and Lundeen, the reliability of difference being 3.15.

The difference in the directions given with the two tests probably accounts for much of this difference. The Zapf test requires a definite answer, *true* or *false*, while the Maller and Lundeen test takes into consideration the feelings or tendencies of the individual by asking him whether he *feels the same* or *different* from what is expressed. Children apparently are more willing to say that they no longer believe a superstition than to deny a feeling of kinship with the ideas.

Further comparison of the responses after instruction to the identical items is made in Table XIII. The mean percentage expressing belief on one or both tests was 10.5 percent. The tendency to consistency, that is, the percentage of responses showing belief in the same superstition on both tests, which was 25.5 percent, was even lower than before instruction. The mean percentage of children giving a superstitious response on only one test was 74.5 percent.

This strengthens the statement made before that children do not have unchanging specific convictions of a superstitious nature. Their beliefs vary from day to day. This makes it extremely difficult to say with any certainty that the instruction will have any lasting effect or even that the results following it were reliable indications of a true change in attitude. The only real tests of this will be the actions of the individuals in actual situations. It will be here that their true feelings will be in evidence. Insofar as paper-and-pencil testing is reliable, it would seem how-

[6] A consideration before and after the period of instruction of the mean percentage of children believing each of the twenty-four superstitions which were either tried out or discussed shows a mean decrease of 11.3 percent, a drop from 13.4 percent to 2.1 percent. The mean percentage of children believing each of the seventy-six superstitions which were not considered during the period of instruction was 18.1 percent before, and 8.0 percent after instruction, giving a mean decrease of 10.1 percent.

TABLE XIII

CONSISTENCY OF BELIEF ON IDENTICAL ITEMS ON THE MALLER AND LUNDEEN AND ZAPF SUPERSTITION TESTS

May, 1935

Items*	Percentage Showing Belief on One or Both Tests	Percentage Showing Belief on One Test	Percentage Showing Belief on Both Tests
3	9.1	80.8	19.2
4	14.7	83.3	16.7
5	3.5	100.0	0.0
6	9.4	100.0	0.0
7	17.5	60.0	40.0
8	7.7	54.6	45.4
10	6.3	83.3	16.7
13	3.1	88.9	11.1
14	4.2	100.0	0.0
16	3.1	100.0	0.0
17	17.8	74.5	23.5
18	2.4	100.0	0.0
19	28.7	37.8	62.2
20	21.0	43.3	56.7
23	14.7	66.7	33.3
25	13.6	82.0	18.0
26	23.1	83.3	16.7
27	12.9	91.9	8.1
28	10.8	71.0	29.0
29	3.1	88.9	11.1
31	5.6	31.2	68.8
34	3.1	88.9	11.1
36	17.1	63.3	36.7
37	14.7	69.0	31.0
38	32.5	81.7	18.3
39	5.9	70.6	29.4
42	4.2	66.7	33.3
44	7.3	57.1	42.9
45	4.9	78.6	21.4
48	11.2	65.6	34.4
49	1.7	60.0	40.0
50	1.7	60.0	40.0
Mean.....	10.5	74.5	25.5

*Items numbered as on test.

ever that a course in general science, devoted expressly to the development of scientific attitudes and to the elimination of superstitions, was successful in reducing these beliefs.[7]

[7] This is also indicated in the results given by:
Caldwell, O. W., and Lundeen, G. E. *An Experimental Study of Superstitions and Other Unfounded Beliefs.* New York City: Bureau of Publications, Teachers College, Columbia University, 1932.

Emotional Adjustment.—The results obtained on the Woodworth Mathews Personal Data Sheet when repeated in May, together with the results previous to instruction are given in Table XIV.

TABLE XIV

COMPARISON OF RESULTS ON WOODWORTH MATHEWS PERSONAL DATA SHEET BEFORE AND AFTER INSTRUCTION

	January			May		
	Boys	Girls	Total	Boys	Girls	Total
Mean	15.29	19.12	17.38	12.97	16.54	14.92
Standard Deviation	8.23	9.24	9.00	8.30	9.93	9.40
Median	13.92	19.24	16.50	11.65	14.55	13.04
25 Percentile	9.38	13.25	10.60	6.88	9.04	7.75
75 Percentile	20.94	25.00	23.36	17.04	23.17	19.89
Quartile Deviation	11.56	11.75	12.75	5.08	7.06	6.06

The mean score in January for the entire group was 17.38 while in May this figure was somewhat lower, 14.92. The median dropped from 16.50 to 13.04 and corresponding decreases may be seen in the 25 and 75 percentiles. There was little change in the standard deviation. Whether these lower scores on the emotional adjustment test indicate that a loss of belief in superstitions is accompanied by a better general adjustment would be difficult to state with certainty since so many other factors have a bearing on the emotional adjustment of a child. There is, however, as was stated earlier, a low positive correlation between belief in superstitions and emotional maladjustment. In January the coefficient of correlation was .24 ± .04 between the Woodworth Mathews Personal Data Sheet and the *true* scores of the Zapf superstition test. In May this figure was still .24 ±.04. Thus it would seem that a direct relationship between the two may exist.

CONCLUSIONS

1. Regular general science work seemed to have no effect in reducing superstitious beliefs, the mean number of superstitions held by pupils having had five semesters of general science being 9.64, while those who had had only one semester averaged 9.58.

2. Superstitious responses were definitely decreased following a period of instruction directed toward this.

3. There was a greater decrease in superstitious responses on the Zapf test than on the Maller and Lundeen test indicating probably that children find it easier to cease saying that a superstition is true than to cease feeling the influence of it.

4. The mean percentage of children who consistently showed belief in the same superstition on both tests was 35.9 percent before the period of instruction and 25.5 percent afterward, indicating that the majority of children do not seem to be consistent in their superstitious beliefs.

5. The true scores of superstitious beliefs were found to correlate positively with emotional maladjustment to the extent of .24 ± .04 both before and after the period of instruction.

6. A slight decrease in the mean, median, and 25 and 75 percentiles was found on the emotional adjustment scores following the period of special work.

APPENDIX

A. Analysis of Maller and Lundeen Superstition Test Indicating Percentage of Pupils Showing Belief in Each Item Before and After Period of Instruction

	January, 1935			May, 1935		
	Boys	Girls	Total	Boys	Girls	Total
1. Whenever he talks about a person that person usually shows up	23.2	35.2	29.7	13.1	20.5	17.1
2. Tells his dream before breakfast if he wants it to come true	4.6	5.1	4.9	0.0	2.5	1.4
3. Wouldn't think of giving a knife to his friend as a gift	24.0	30.1	27.3	8.5	11.5	10.1
4. Would not turn back for something forgotten after starting on a journey	26.3	26.9	26.6	13.9	14.1	14.0
5. Would not change a garment after accidentally putting it on wrong side out	6.9	7.6	7.3	0.7	4.4	2.8
6. Does not wish to have anything to do with the number thirteen	24.8	23.0	23.8	9.3	10.8	10.1
7. When walking with a friend never lets a post or any object come between them	34.1	46.7	40.9	10.8	16.0	13.6
8. Would not open an umbrella in the house	37.9	42.3	40.2	4.6	7.0	5.9
9. Usually makes a wish when seeing a falling star	10.0	21.1	16.1	5.4	10.8	8.4
10. Considers it a sign of bad luck to walk under a ladder	16.2	26.2	21.7	0.7	6.4	3.8
11. Crosses his fingers when telling something that is not true	4.6	2.5	3.5	0.7	1.9	1.4
12. Would not start a new task on Friday	9.3	12.1	10.8	3.1	0.6	1.7
13. Believes that if he sleeps in the moonlight he may become sick or lose his mind	0.7	1.9	1.4	0.7	1.9	1.4
14. Often looks at the new moon over his right shoulder	7.7	10.8	9.4	3.8	2.5	3.1

	January, 1935			May, 1935		
	Boys	Girls	Total	Boys	Girls	Total
15. Believes he could make a person turn and look by staring at his back	13.9	17.3	15.7	3.1	10.8	7.3
16. When dressing puts on his left shoe first to avoid bad luck	6.9	6.4	6.6	3.8	0.0	1.7
17. Knocks on wood after telling about his good luck	5.4	37.1	22.7	3.8	30.1	18.2
18. Believes that it is bad luck to light three cigarettes with one match	18.6	15.3	16.8	2.3	1.9	2.1
19. Considers the howling of a dog as a sign of death	28.6	49.9	40.2	22.4	32.6	28.0
20. Would not count the number of cars in a funeral procession	29.4	41.6	36.0	16.2	23.0	19.9
21. Considers three to be a charm, a very lucky number	4.6	11.5	8.4	3.8	1.9	2.8
22. Thinks that success in life is a matter of luck	13.1	28.2	21.3	10.8	24.3	18.2
23. Thinks that a falling star means that someone is dying	14.7	22.4	18.9	12.4	5.1	15.4
24. Carries a good luck charm for a protection against bad luck	16.2	10.8	13.3	1.5	0.0	0.7
25. Feels uneasy to have a black cat cross the path in front of him	27.1	37.8	32.9	10.0	16.0	13.3
26. Considers it good luck to find a four-leafed clover	36.4	51.9	44.8	18.6	29.4	24.5
27. Often makes a wish on seeing the first star in the evening	3.8	33.9	20.3	2.3	23.0	13.6
28. Finds that the opposite of what he dreams about usually comes true	12.4	27.5	20.6	9.3	13.4	11.5
29. Considers it lucky to find a pin with the point lying toward him	10.0	12.8	11.5	0.7	3.8	2.4
30. Would not remove a wedding ring from his finger	19.3	17.9	18.5	3.1	5.7	4.5
31. Feels that someone is speaking well of him when his right ear itches	7.7	23.0	16.1	3.1	8.3	5.9
32. Thinks that his future is shown by the lines and markings on the palms of his hands	10.0	16.6	13.6	7.7	9.6	8.7
33. Considers it good luck to hang a horseshoe over his door	20.9	26.2	23.8	10.0	6.4	8.0
34. Feels that something terrible such as a death in the family may happen because he has broken a looking glass	0.7	4.4	2.8	0.7	2.5	1.7
35. Feels that someone is saying something mean about him when his left ear itches or burns	2.3	17.3	10.5	0.7	4.4	2.8

	January, 1935			May, 1935		
	Boys	Girls	Total	Boys	Girls	Total
36. Thinks that the person who catches the bride's bouquet will be the next to be married	15.5	37.8	27.6	9.3	25.6	18.2
37. Considers it good luck to find a horseshoe	23.2	37.1	30.8	13.9	14.7	14.3
38. Feels that the behavior of certain animals is more reliable in predicting the weather than the United States Weather Bureau	43.4	28.8	35.3	13.9	12.8	13.3
39. Thinks of misfortune when a bird flutters against the window	7.7	9.6	8.7	1.5	4.4	3.1
40. Finds that one disappointment is usually followed by two others	10.0	25.6	18.5	3.8	6.4	5.2
41. Believes that when he has his fortune told it usually comes true	6.9	20.5	14.3	2.3	12.1	7.7
42. Feels that he should be very cautious on Friday the 13th	10.0	15.3	12.9	3.1	3.8	3.5
43. Considers his prosperity and happiness in life as the result of being born under a lucky star	6.2	8.3	7.3	0.0	2.5	1.4
44. Finds himself cross when getting up on the wrong side of the bed	6.2	20.5	14.0	1.5	10.8	6.6
45. Often carries a gift penny for luck	9.3	11.5	10.5	3.1	3.8	3.5
46. Feels that it is not likely to rain if he carries an umbrella	6.9	16.0	11.9	3.8	8.9	6.6
47. Believes that eating a stolen apple is likely to make him sick	8.5	15.3	12.2	6.9	5.1	5.9
48. Considers seven a lucky number	25.5	26.9	26.2	10.8	10.2	10.5
49. If he is unlucky when playing cards, he walks around the table three times for luck	4.6	5.7	5.2	1.5	1.2	1.4
50. When this person spills salt, he throws a little of it over his left shoulder to prevent a quarrel with his friend	2.3	10.8	7.0	0.0	2.5	1.4

B. Analysis of Zapf Superstition Test
Indicating Percentage of Pupils Marking Each Item True
Before and After Instruction*

3. Giving a knife to a friend will break the friendship	4.6	3.8	4.2	0.7	2.5	1.7
4. You should never turn back for something you have forgotten after having started on a journey	8.5	16.0	12.6	3.1	5.1	4.2
5. If you put a pair of stockings on wrong side out you should not change them	3.8	5.1	4.5	0.0	1.2	0.7

* Items omitted were not superstitions.

	January, 1935			May, 1935		
	Boys	Girls	Total	Boys	Girls	Total
6. If thirteen people are together at a table, one will die within the year.....	1.5	3.8	2.8	0.0	0.6	0.3
7. When walking with a friend you should never let a post or other object come between yourself and your friend.....	29.4	32.6	31.1	13.1	9.6	11.2
8. An umbrella should never be opened in the house	36.4	41.0	38.8	4.6	5.7	5.2
10. You should never walk under a ladder	27.1	28.8	28.0	3.8	3.2	3.5
13. Sleeping in the full light of the moon causes insanity	7.7	7.0	7.3	1.5	2.5	2.1
14. You should always look at the new moon over your right shoulder.....	2.3	9.6	6.3	0.7	1.2	1.0
16. You should always put your left shoe on before your right shoe when you are dressing	4.6	5.1	4.9	2.3	0.6	1.4
17. A person should always knock on wood when telling about his good fortune...	4.6	19.8	12.9	1.5	7.0	4.5
18. If three cigarettes are lighted with the same match, one of the three people will die before the year is out.....	3.1	5.1	4.2	0.7	0.0	0.3
19. The dismal howling of a dog means a death in the near future.....	30.2	46.1	38.8	13.1	25.6	19.9
20. You should never count the number of cars in a funeral procession.....	20.9	25.6	23.4	10.8	17.9	14.7
23. A falling star means that someone is dying while the star is falling.....	8.5	20.5	15.0	3.8	8.9	6.6
25. If a black cat crosses your path, something unpleasant or harmful will happen to you	10.0	24.9	18.2	2.3	3.8	3.1
26. If you find a four-leafed clover it will bring you good fortune.....	18.6	28.8	24.1	5.4	3.8	4.5
27. If you repeat the following verse when you see the first star at night, your wish will come true: Star light, star bright, First star I see tonight, I wish I may, I wish I might Have the wish I wish tonight.....	1.5	10.8	6.6	0.0	1.9	1.0
28. When a person dreams of bad fortune, it means that he will have good fortune	10.8	21.7	16.8	1.5	5.7	3.8
29. See a pin and pick it up, all day long have good luck. See a pin and let it lie, before evening you will cry.....	9.3	17.9	14.0	0.0	1.9	1.0
31. When your right ear itches or burns, someone is speaking well of you.....	10.8	21.1	16.4	2.3	5.7	4.2
34. If you break a mirror you will have misfortune for seven years.....	6.2	16.0	11.5	0.7	2.5	1.7

		January, 1935			May, 1935		
		Boys	Girls	Total	Boys	Girls	Total
36.	The girl who catches the bride's bouquet will be the next to be married.....	13.9	25.6	20.3	2.3	10.8	7.0
37.	It is very lucky to find a horseshoe....	21.7	34.6	28.7	4.6	7.0	5.9
38.	If squirrels gather an unusually large supply of nuts, it means that a very cold winter is coming.....	57.3	50.6	53.5	31.7	24.9	28.0
39.	If a bird enters the house and flies around the room, it is a sign of death	6.2	12.8	9.8	1.5	7.0	4.5
42.	You should never start anything of importance on Friday, the 13th.....	11.6	17.3	14.7	0.7	3.2	2.1
44.	Getting out of bed on the wrong side makes a person cross and disagreeable	12.4	26.9	20.3	1.5	6.4	4.2
45.	If a penny has been given to you, you should always carry it.....	6.2	5.7	5.9	1.5	3.2	2.4
48.	Seven is a lucky number.....	23.2	28.2	25.9	4.6	4.4	4.5
49.	A person who is unlucky when playing cards may change his luck by walking around the table three times.....	8.5	4.4	6.3	0.7	1.2	1.0
50.	If a person spills salt, he can prevent quarrels with his friends by throwing some of the spilled salt over his left shoulder.....	5.4	10.2	8.0	0.7	1.2	1.0
52.	A new ship should always be christened with a bottle of wine.....	35.6	30.7	32.9	21.7	15.3	18.2
53.	If a person has hairy arms, it is a sign that he will be wealthy.....	7.7	13.4	10.8	2.3	2.5	2.4
55.	A person who has red hair usually has a bad temper.....	18.6	27.5	23.4	8.5	18.5	14.0
56.	You should cut your hair during the full moon so that it will grow better.....	3.8	9.6	7.0	1.5	7.6	4.9
57.	A boxer spits on his hands while boxing so that there will be more force in the blow.....	10.8	30.1	21.3	4.6	19.8	12.9
59.	If a person has a square jaw, it means that he has a strong will.....	15.5	16.0	15.7	3.8	4.4	4.2
60.	Carrying a chestnut or buckeye in your pocket will prevent rheumatism.....	5.4	3.8	4.5	0.0	1.2	0.7
61.	Bridal clothes should never be worn before the wedding day.....	29.4	49.9	40.6	10.8	21.7	16.8
63.	When a snake is killed its tail does not die until after sunset.....	61.2	41.0	50.0	46.5	32.6	38.8
64.	If a person can look you straight in the eye, it is a sign that he is honest.....	49.6	58.3	54.2	22.4	30.1	26.6
65.	If dogs eat grass it means rain.....	7.7	6.4	7.0	1.5	5.1	3.5
66.	If a girl is a bridesmaid three times, she will never be a bride.....	4.6	8.9	7.0	0.7	1.9	1.4

	January, 1935			May, 1935		
	Boys	Girls	Total	Boys	Girls	Total
68. Certain people have the power to make others ill by casting a spell over them	27.9	38.4	33.6	19.3	22.4	21.0
69. If you wish on a load of hay, the wish will come true	3.1	6.4	4.9	1.5	0.6	1.0
71. If you remove a ring from your friend's finger, it will break your friendship	8.5	7.0	7.7	0.0	0.6	0.3
72. A cat has nine lives	15.5	27.5	22.0	8.5	14.7	11.9
74. If you see a white horse it will bring you good fortune	4.6	11.5	8.4	0.0	1.2	0.7
75. Brunettes are more trustworthy than blondes	24.8	27.5	26.2	15.5	19.8	17.8
76. Churchyards are haunted	3.8	4.4	4.2	0.7	1.2	1.0
77. If you lose a hairpin you will lose a friend	3.1	3.8	3.5	0.0	0.0	0.0
80. When a person is especially fond of pickles, it shows that he is in love	10.8	10.2	10.5	4.6	5.1	4.9
81. Clocks stop when the owner dies	6.2	11.5	9.1	1.5	5.7	3.8
82. If you cross your fingers it will keep bad fortune away	5.4	7.0	6.3	0.0	0.6	0.3
83. Death is foretold by the ringing of a bell that cannot be accounted for otherwise	3.1	10.2	7.0	4.6	4.4	4.5
84. A disease is a direct punishment for some wrong doing	13.9	12.1	12.9	6.2	0.0	2.8
86. If March comes in like a lamb, it goes out like a lion	16.2	22.4	19.6	6.9	8.9	8.0
87. Spitting on a baseball bat before using it makes the play better	14.7	10.2	12.2	4.6	1.2	2.8
88. If you have bad luck three times your bad luck ends	6.2	3.8	4.9	0.7	0.6	0.7
90. If the sun shines while it is raining, it will rain again the next day	11.6	9.6	10.5	0.0	3.2	1.7
92. If you stub your toe you should go back over the same spot	13.9	23.0	18.9	2.3	7.6	5.2
93. If you let a knife accidentally fall to the floor, you will receive a visit from a man	10.8	23.0	17.5	1.5	7.0	4.5
94. If animals have an unusually thick coat of fur in the fall of the year it is a sign that a very cold winter is coming	37.2	37.8	37.4	15.5	16.6	19.6
95. If you receive a chain letter you must keep up the chain	17.0	15.3	16.1	8.5	11.5	10.1
98. You should not get out of bed with the left foot first	6.9	8.3	7.7	1.5	0.6	1.0

	January, 1935			May, 1935		
	Boys	Girls	Total	Boys	Girls	Total
99. If a person spills salt at the table he will quarrel with a friend	5.4	7.6	6.6	3.1	1.2	2.1
100. Carrying a rabbit's foot will keep you from harm	11.6	20.5	16.4	1.5	0.6	1.0
101. If you accidentally drop a fork you will have a visit from a woman	13.9	21.7	18.2	2.3	3.2	2.8
102. A ring around the moon means rain	31.7	32.6	32.2	16.2	19.2	17.8
104. A girl should never take the last piece of anything remaining on a plate or she will be an old maid	6.9	7.0	7.0	0.7	2.5	1.7
105. If the palm of your hand itches, it means that you will get money	13.9	22.4	18.5	3.8	5.7	4.9
106. You should never have peacock feathers in the house	3.8	7.0	5.6	0.0	0.6	0.3
107. Touching a toad will cause warts to grow on your hands	29.4	51.2	41.3	16.2	31.4	24.5
109. If you have a pimple on your tongue you have been telling a lie	10.0	14.7	12.6	1.5	4.4	3.1
111. If a picture falls off the wall without anyone touching it, it is a sign of death	14.7	17.9	16.4	3.1	4.4	3.8
112. When porcupines are hunted or annoyed they shoot out their quills in anger	48.8	54.4	51.8	48.0	50.6	49.3
113. If rice is thrown after a newly married couple they will have good fortune	16.2	17.9	17.1	1.5	6.4	4.2
114. Three loud knocks at the head of the bed of a sick person is a sign of death	6.2	6.4	6.3	2.3	3.2	2.8
115. Rats leave a ship before a shipwreck	34.8	31.4	32.9	25.5	32.0	29.0
117. If the groundhog sees his shadow on groundhog day, there will be six more weeks of cold weather	20.1	32.0	26.6	1.5	2.5	2.1
118. If new shoes squeak it is a sign that you have not paid for them	2.3	2.5	2.4	0.0	0.6	0.3
119. If you think a great deal about any contagious disease you are likely to catch that disease	12.4	14.7	13.6	2.3	3.8	3.1
121. If the last rehearsal of a play is poor, the real performance of it will be good	18.6	26.2	22.7	5.4	12.1	9.1
122. If you find a penny you should always keep it	13.9	17.9	16.1	4.6	3.8	4.2
123. You should not sing before breakfast	14.7	14.7	14.7	2.3	3.2	2.8
124. Pearls bring unhappiness	11.6	8.3	9.8	3.1	3.2	3.1
125. The person who gets the larger piece of a wishbone while he makes a wish will have his wish come true	18.6	33.9	26.9	3.1	9.6	6.6

		January, 1935			May, 1935		
		Boys	Girls	Total	Boys	Girls	Total
127.	If you dream of the same thing three nights in a row it will come true.....	13.1	18.5	16.1	2.3	4.4	3.5
129.	The seventh son of a seventh son will be an unusually successful man.....	13.9	16.0	15.0	3.8	1.9	2.8
130.	A person who is lucky in cards will be unlucky in love.....	10.8	15.3	13.3	1.5	1.2	1.4
132.	A wish will come true if it is made while you are looking at a white horse.....	6.9	8.9	8.0	0.7	2.5	1.7
133.	Horse hairs placed in water will turn into horse-hair worms.....	10.8	6.4	8.4	5.4	2.5	3.8
134.	The ninth wave of water is always the largest.....	12.4	14.7	13.6	3.1	1.2	2.1
135.	If a girl makes a wish while turning down the hem of her dress the wish will come true.....	3.1	8.9	6.3	0.0	1.2	0.7
137.	A bride should always wear something blue on her wedding day.....	7.7	9.6	8.7	3.1	3.8	3.5
138.	If a piece of wedding cake is put under the pillow before retiring at night, a girl will dream of her future husband..	3.8	12.8	8.7	1.5	1.2	1.4
139.	If the sun sets red the weather will be fair the next day.....	31.7	50.6	42.0	24.8	26.9	25.9
142.	If two persons say the same thing at the same time, their wish will come true provided they wish for something before another word is spoken.....	13.9	23.0	18.9	8.5	6.4	7.3
143.	If you sleep with a book under your pillow, it will help in remembering your lesson.....	10.0	9.6	9.8	2.3	2.5	2.4

COLLEGE ACHIEVEMENT OF LOWER GROUP SECONDARY SCHOOL STUDENTS

Report of an Eight Year Study of Lower Group Students Admitted to Ursinus College

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PROBLEMS incident to the admission of students are among the most important that the administrative officers of a college are called upon to face. This is especially true when the guidance function, with all its implications, becomes the accepted educational policy. Rather than admit students freely and dispose of them ruthlessly when they fail to measure up to certain standards which the college sets, it is coming to be more generally recognized that every applicant should be considered independently in the light of his abilities, needs and interests, as well as in relation to the aims and objectives of the college. While no college claims to have perfected an ideal admissions procedure, many meritorious policies have been tried. In reporting the following study, which has been carried on in one college during the past eight years, it is hoped that some light may be thrown on the problems of the admissions office.

Rank in class of students in the secondary school has long been used by the colleges as the most important criterion in the selective process. This practice has been based upon the findings of various investigations, as, for example, that conducted by the University of Minnesota, which tended to show that the best single criterion for predicting success in college was the high school record. While some colleges have consistently granted admission to students who ranked above a certain level in the class—as, for instance, the highest fourth, the highest third, or the upper half—other institutions have left the way open for lower group students to gain admission provided they measured up to certain other standards that were deemed important. However, there has never been general agreement among admission officers as to what these additional criteria should be.

Prior to 1928, any graduate of an approved secondary school who had completed fifteen units of prescribed work was eligible for admission to Ursinus College, regardless of rank in class, unless the principal definitely refused to recommend him for college. In the spring of 1928, it was brought to the attention of the Faculty that some steps ought to be taken to curtail student failures, which had increased from 3.8 percent of the

total student body in 1927 to 7.2 percent in 1928. After some discussion, it was decided to admit on certificate only those students who at the time of graduation ranked in the highest two-thirds of the class. Students who ranked in the lowest third of their class at the time of graduation from the secondary school would be required to show further evidence of their eligibility for admission to college by means of tests administered by the college admissions officers.

It was decided to administer a battery of tests to the entire entering class in September, 1928. For those students who had stood in the upper two-thirds of their class in the secondary school the test results would be utilized for placement and guidance purposes in the college. For those applicants who had stood in the lowest third of their class in the secondary school the tests would serve as entrance examinations. The tests administered were: Otis Intelligence Advanced Examination, Cross English Test, Columbia Research Bureau Algebra, American History, and Foreign Language Tests. It was agreed by the Committee on Admissions that the high school graduate whose marks were in the lowest third of his high school graduating class, whose records in the examination compared favorably with the results attained by students already admitted to the college on certificate should be given a chance to show what he could do in college.

There were four students whose standing in high school had placed them in the lowest third of their respective classes. However, their comparative standing in the battery of tests was relatively high so far as the group as a whole was concerned. Therefore, it was decided to admit these four students and give them an opportunity to demonstrate their ability to do college work. In order to illustrate the comparative standing of these students with the other students who took the tests, and who had been admitted to college on the basis of their class standing, a tabulation of the results for the four students concerned is shown herewith. The score and comparative standing in the group as a whole for each student in each of four tests are given. For example, Student A had a score of 181 in the intelligence test, and stood thirtieth from the top in a group of 140 in this test.

It should be noted that in some of the tests these four students showed results that were decidedly better than many of the students who had already been admitted to the college by certificate, and in no case was their standing as low as that of some students who had already been admitted on the basis of their ranking in the highest two-thirds of their class in the secondary school. Furthermore, three of these four students had

TABLE I

TEST RESULTS OF FOUR LOWER GROUP STUDENTS ADMITTED TO URSINUS COLLEGE IN SEPTEMBER, 1928

	Intelligence		English		Algebra		American History	
	Score	G.S.	Score	G.S.	Score	G.S.	Score	G.S.
Student A	181	30/140	143	91/142	15	84/137	95	9/131
Student B	182	26/140	165	14/142	29	27/137	82	21/131
Student C	167	76/140	141	98/142	17	72/137	127	1/131
Student D	179	37/140	130	122/142	29	29/137	104	4/131

been graduated from large city high schools. All seemed to possess personal qualifications that would tend to make for success in college.

Of these four students who were admitted on the basis of the results in the entrance examinations, Student A was discontinued by Faculty action at the end of the first semester, Student D was discontinued at the end of the fourth semester, and Student B was discontinued at the end of the fifth semester. Only one of the four, Student C, was eventually graduated from Ursinus. He is today administering the affairs of a large business concern. It is of interest to note, however, that Student A subsequently entered another college from which he was graduated and that he later received an advanced degree in a higher institution of learning. Student B likewise enrolled in another college, from which he was graduated, and later took advanced work in science in a leading university, ultimately receiving the Master's degree. The subsequent history of Student D is unknown. In other words, of the four lower group students admitted to Ursinus College in September, 1928, three were ultimately graduated from college and two of these three later received advanced degrees from recognized graduate schools.

The same general admissions policy was followed until the end of the college year of 1932-33. There were modifications in the testing program from time to time, as, for example, the substitution of the Nelson-Denny Reading Test for the Columbia Research Bureau American History Test. This change was made because, in the judgment of the committee, the latter test had little prognostic value so far as success in college was concerned, and there was no significant correlation between the results obtained in this test and achievement in the Freshman history course in college. On the whole, however, the testing program from 1928 to 1932 was quite uniform, alternate forms of the various tests being used whenever practicable. During this five-year period, the average percentage of student failures was .022. During the preceding three-year period, from

1925 to 1927, the percentage of student failures had been .043, the peak of .072 having been reached in 1927 as previously indicated. Table II shows comparative figures on enrollment and student failures from 1925-26 to 1935-36.

TABLE II

COMPARATIVE FIGURES ON ENROLLMENT AND STUDENT FAILURE FROM SEPTEMBER, 1925 TO JUNE, 1936

	Opening Enrollment			Discontinued by Faculty			
Year	Men	Women	Total	Men	Women	Total	Percent of Total
1925–26	174	129	303	4	6	10	.030
1926–27	215	173	388	9	1	10	.038
1927–28	253	201	454	27	6	33	.072
1928–29	246	214	460	5	0	5	.011
1929–30	267	215	482	12	1	13	.027
1930–31	261	207	468	15	0	15	.032
1931–32	253	205	458	5	1	6	.013
1932–33	294	183	477	11	3	14	.029
1933–34	260	184	444	5	2	7	.016
1934–35	290	176	466	9	2	11	.023
1935–36	275	184	459	16	1	17	.037

In 1933, on recommendation of the Committee on Admissions, the Faculty decided to accept on certificate only those students who ranked in the upper half of their class at the time of graduation from the secondary school. That is, since 1933 students standing in the lower half of their class have been required to show further evidence of their eligibility for college by means of examinations administered by the admission officers. The testing program has been somewhat simplified. Instead of the Otis Intelligence Advanced Examination, the American Council on Education Psychological Examination has been substituted. For the past two years, the only additional tests have been the Cross English and the Cooperative Test Bureau Language examinations. Table III shows the number of students admitted each year by examination, the number who failed and withdrew, the number who withdrew with good standing, and the number who have graduated or are still in college.

A survey of the records of the 50 students who failed or were in poor scholastic standing at the time of withdrawal indicates that 46 did not get beyond the Sophomore year, and that the highest percentage of casualties is in the Freshman year. Sixteen students did not survive more

TABLE III

DISPOSITION OF LOWER GROUP STUDENTS ADMITTED BY EXAMINATION, SEPTEMBER, 1928 TO JUNE, 1936

Year of Entrance	Number Admitted by Examination	Failed or in Poor Standing on Withdrawal	In Good Standing on Withdrawal	Graduated or Still in College
1928–29	4	3	0	1
1929–30	12	9	2	1
1930–31	14	5	4	5
1931–32	13	3	5	5
1932–33	13	5	3	5
1933–34	20	8	7	5
1934–35	25	11	5	9
1935–36	21	6	1	14
Totals	122	50	27	45

than one semester, 19 did not survive more than two semesters, 6 did not survive more than three semesters, and 5 did not survive more than four semesters.

Of the 27 students who withdrew from college and were in good scholastic standing at the time of withdrawal, 2 left because of illness; 4 transferred to other colleges for special courses; 6 entered medical, dental or other professional schools; 11 had financial difficulties which made it impossible to continue college work; and 4 left for miscellaneous and undetermined reasons. So far as is known, all of the students who transferred to other colleges are doing satisfactory work. The students who entered professional schools are likewise doing creditable work and at least one of the six has been a high honor student in medical school.

Five classes have been graduated from the college since the lower group ruling was put into effect by the Faculty. Seventeen lower group students who were admitted on examination have been graduated, as follows:

1 of 4 who entered in 1928
1 of 12 who entered in 1929
5 of 14 who entered in 1930
5 of 13 who entered in 1931
5 of 13 who entered in 1932

One of the 17, a young woman, raised her position from the lowest third of her class in the secondary school to the highest third of her class in college. Another, a young man, raised his position from the lowest third of his class in high school to the middle third of his college class.

The other 15 students stood in the same relative position of their college class as they had stood in the secondary school, namely, the lowest third. The highest four-year average in college of any of the 17 students was 83.10; the lowest, 72.26.

In order to ascertain a possible relationship between graduation from a particular type of secondary school and subsequent college experience, lower group students entering Ursinus were classified as follows: (1) graduates of city schools, (2) graduates of small town or rural schools, and (3) graduates of private schools. Students entering in 1935 were not considered in this aspect of the study because of the fact that they have attended college only one year thus far. In other words, only those students who have had an opportunity to go through two or more years in college, a total of 101 students, were included. The relationship between types of graduates and experiences in college is indicated in Table IV.

TABLE IV

TYPE OF HIGH SCHOOL GRADUATE AND SUBSEQUENT EXPERIENCE IN COLLEGE

	City School	Small Town or Rural School	Private School	Totals
Graduated, still in college, or in good standing at time of withdrawal	30	19	10	59
Discontinued, or in poor standing at time of withdrawal	12	23	7	42
Totals	42	42	17	101

Over a period of seven years—from 1928-29 to 1934-35, inclusive—the same number of lower group students had been admitted from city schools as from small town or rural schools. Of the former group, 30, or 71 percent, were able to do satisfactory work in college. Of the latter group, only 19, or 45 percent, were able to do a satisfactory grade of college work. So far as the 17 private school students were concerned, 10, or 60 percent, were able to do satisfactory work in college. It is also of interest to note that of the 17 lower group students who have actually been graduated from the college, 9 came from city schools, 4 from private schools, and 4 from small town or rural schools. It would appear from the above data that lower group students from city schools have a much better chance of success in college than students coming from either of the other two types of schools, that lower group students from private schools have a better than even chance of success, whereas slightly more than 50 percent of the lower group students coming from small town or rural schools are likely to fail.

What are the factors operating in the situation that seem to give the city school and the private school the advantage indicated? Is it in the school itself and in the type of experiences which the school provides? Or is it something more subtle, such as differences in cultural background, individual differences, and the like? While some of these subtler factors doubtless have significance, the writer is of the opinion that the large city schools, and the better private schools, provide opportunities for students which, in the long run, make the transition from school to college easier. Such opportunities would include a better quality of teaching, better school facilities and a wider range of experiences.

Because of the physical set-up at Ursinus, it has been possible to make rather thorough case studies of the students involved in this investigation. A counseling program, which has been in operation in the college since 1928, has supplemented the writer's personal interest in this group.

An analysis of the records of those students who at the time of graduation, or upon the termination of their college experience, had attained an average of B (80 percent) or better would seem to indicate that these students were motivated by some clearly defined purpose pattern. An analysis of the records of those students who failed, or who were able to do only a passing grade of work, C (70 percent) or slightly better, indicates that there was no clearly recognizable purpose pattern apparent. Vocational aim, or purpose, appeared to be the strongest motivating factor; although pride in accomplishment, or desire to succeed in college, seemed to be a strongly impelling force in certain instances. It is also clear from the records that as the student matured, and as his interests became more clear-cut, the quality of his college work tended to improve. The desire to enter a professional school, such as medical school or law school, where standing in college was regarded as a determining factor in gaining admission, also seems to have had its effect in improving the status of the student. The findings of the study in this connection would seem to give support to the conclusions of Marshall who holds that vocational aim operates as a strong factor in the success of students in college.[1]

The evidence in this study also seems to support the thesis advanced by Hale in his doctoral dissertation at Yale University, who states:[2]

[1] Marshall, M. V. "The Life-Career Motive and Its Effects on College Work," *The Journal of Educational Research*, XXIX (April, 1936), pp. 596-598.

[2] Hale, Lincoln B. "Functional Patterns in Transition from School to College," Doctoral dissertation. Yale University, June, 1936.

"It is the writer's thesis that there are certain generalized abilities or functional patterns which largely explain the way in which one individual handles his college experience in contrast with the behavior of another. (There are at least four such patterns—purpose, social, decision, and sensivitity.) It has been indicated that these four functional patterns may be thought of as constituting a configuration developing out of a multitude of previous experiences which have necessitated their use and development, and that these configurations can be discovered and identified in student experience. Each pattern may be thought of either as positive or negative, which means that, ignoring degrees, the individual possesses: (1) the habit of forming and acting on purpose (or the opposite); (2) the ability to live and work effectively with other people, including strangers, (or the opposite); (3) the habit of evaluating experiences objectively and of making decisions on the basis of the evaluation (or the opposite); and (4) a sense of relevance, proportion and potentiality (or the opposite)."

CONCLUSIONS AND RECOMMENDATIONS

As indicated, the study here reported has been concerned entirely with the college achievement of lower group secondary school students, and the data are too limited to warrant specific generalizations. However, the following tentative conclusions and recommendations would seem to be in accord with the present findings:

1. Since slightly better than 50 percent of the lower group students admitted to Ursinus appear to be able to do a satisfactory grade of college work, it would seem to be justifiable to raise the question as to whether any applicant should be denied admission to college on the basis of class rank alone.

2. Lower group students who graduate from a large public high school, or a good preparatory school, appear to be better college risks than lower group students who have been prepared in small town, or rural schools. It would seem to follow from this that special counseling provisions should be made for such students as may be admitted from the latter group.

3. Lower group students who have well-defined purpose patterns, or who possess definite vocational interests, would seem to have a better chance of surviving the college experience than lower group students who do not possess these characteristics in marked degree.

4. Since it has been indicated that certain lower group students who have not done a satisfactory grade of work in Ursinus were able to do well in other colleges, it would seem reasonable to suggest that college administrators be cautious in attaching too readily the stigma of failure to stu-

dents; and further, that they make it less difficult than it ordinarily is for a "failing" student to transfer to another institution.

5. As a general rule, lower group students who are admitted to college may not be expected to change their relative position in the college group. However, through wise counseling, the awakening of latent interests, the natural process of maturing, the development of good study habits, and the like, lower group students who succeed in surviving the first two years of the college experience are sometimes able to reach higher levels of attainment in their college work.

6. The study would seem to suggest that in reaching a decision as to whether lower group students should be admitted to college, all data that it is possible to secure on such students ought to be obtained. In addition to previous academic accomplishment, facts pertaining to the pattern of the personality concerned appear to have prognostic value. Personality tests, ratings of teachers and others on such qualities as purpose, determination, interest, and the like, could be utilized to advantage.

TRENDS AND NEEDS IN THE TRAINING OF TEACHERS FOR SPECIAL CLASSES FOR HANDICAPPED CHILDREN[1]

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If the conclusions of Learned, Bagley and the other authors of "The Professional Preparation of Teachers for American Public Schools" is correct that "so far as the state can provide education, the teacher is the substance of it," and if the slogan of the committee on Children of Lowered Vitality of the White House Conference on Child Health and Protection, namely, "An expert and technically-trained teacher for every physically handicapped child in the United States," is a tenable battle-cry to action along the whole Special Education front, then it behooves an organization such as the International Council for Exceptional Children to address itself resolutely and unremittingly to the study of the questions of special-class teacher qualification standards and criteria, to the conducting of interim inventories of the progress that is being achieved throughout the country in the staffing of all kinds of special classes with thoroughly competent teachers, and to the determination of the measures that should be instituted for improving the quality of special-class work by attracting qualified teachers to the service of handicapped children. Certainly there is no more important factor in the salvaging of mentally or physically shipwrecked childhood than the efficiency of the teacher "on the spot."

That the quality and adequacy of the formal technical preparation are regarded as of paramount importance for supplying the country with skilled workers in various professions and for elevating the status of the professions, is attested by the large number of professional organizations which, not content to rely upon politically created city or state certification boards, have created agencies, councils, committees, or commissions to inspect, rate, and accredit institutions of higher learning on the basis of definitely formulated qualitative and quantitative criteria of plant, equipment and staff requirements and to evaluate and standardize curricula of various kinds. Well known among such rating bodies are the North Central Association of Colleges and Secondary Schools, the Southern Association of Colleges and Secondary Schools, the Middle States Association of Colleges and Secondary Schools, the Association

[1] Delivered in part before the International Council for Exceptional Children, in Cincinnati, Ohio, February 19, 1937.

of American Universities, the American Association of Teachers Colleges, the American Association of Colleges of Pharmacy, the Council on Medical Education and Hospitals of the American Medical Association, the Dental Educational Council of America, the Council on Legal Education and Admissions to the Bar of the American Bar Association, and finally, the Committee on Engineering Schools of the Engineers' Council for Professional Development. The latter, although its inspections started only in November, 1935 has already accredited the undergraduate curricula in all the degree-conferring engineering schools except four in the New England, Middle States and Maryland region, and it had evaluated the curricula, facilities, and staff in all the remaining regions of the country by June, 1937. The fact that this basic work of evaluation and standardization is being carried on by many volunteer professional organizations instead of by state or municipal commissions or boards is probably due, in part, to the apathy, incompetency, or unwillingness of such boards to take the initiative in formulating professional qualification standards and, in part, to the fact that recommendations reached by national professional organizations carry more weight because of the prestige enjoyed by nationwide societies of experts.

That the work of standardizing and rating bodies has profoundly influenced the development of many professional curricula and thereby elevated the professional competency of the graduates is unquestionable.

This can be fittingly illustrated from the field of medicine in which the work of accrediting and standardizing medical schools by the Council on Medical Education and Hospitals of the American Medical Association, which began to function in 1905, has achieved notable results in the elimination of inferior or quack medical schools and in the advancement of the standards of medical education. At that time the Council inspected about 160 medical schools, of which 82 were classified as acceptable, 46 as doubtful, and 32 as non-acceptable. Five states alone contained 54 of these schools, of which 48 were non-acceptable. Within 22 years the number of schools has been reduced to 80, of which only six were unacceptable. Today the number of approved medical schools in the United States is 77, while only seven remain in the unapproved category. On the constructive side, the work of the Council is equally noteworthy. Now all of the recognized medical schools in the United States and Canada require as a prerequisite for entrance into a medical school the completion of two full academic years and certain designated credits in definitely prescribed subjects in an approved college. Prior to the work of the Council many

medical schools admitted students who were merely high school graduates. Now all the approved medical schools require the successful completion of from 3,600 to 4,400 hours in nine definitely prescribed fields of study, the percentage of time to be devoted to each area being definitely indicated.

The recommendations of the Council are not limited to the curricular requirements but also include the organization, administration, plant and staff requirements, the clinical facilities, and the resources that an approved school should have. All of the medical schools listed in the 1936 report of the Council meet the prescribed requirements while forty-five have advanced beyond the minimum standards.

In 1934 the Council also assumed the task of inspecting, standardizing, and rating schools of physical therapy. The "essentials of an acceptable school for physical therapy technicians" have now been defined with respect to organization, administration, faculty, plant, clinical facilities, resources, admission standards, and detailed minimal curricular requirements, and thirty-five schools have already been inspected and evaluated in the light of the prescribed standards. Incidentally, I may remark that the Council apparently was unaware of the standards for training physiotherapists recommended by the Hoover White House Conference Committee on Special-Class Teacher Training. Not only so, in 1936 the Council in collaboration with the Board of Registry of the American Society of Clinical Pathologists (organized in 1928) similarly formulated the essential requirements of an acceptable school for clinical laboratory technicians.

As educators well know, for many years somewhat similar agencies, commissions, or committees of education associations or survey staffs have existed for the purpose of evaluating and standardizing teacher-training institutions or departments or teacher-training curricula. But it is notorious that such agencies have largely confined their deliberations to the teacher requirements of the regular grades in the elementary and secondary schools. The majority of them seem to have been quite oblivious even of the existence of a highly specialized technical field of teacher-training which calls for the preparation of qualified teachers for the most difficult teaching problems that confront the public schools, namely the skilled instruction of the children who constitute the most difficult educational problems, namely, the mentally, socially, and physically handicapped or maladjusted. Equally notorious is the fact that practically none of the scores of articles that have emanated from the pens of individual educa-

tional leaders during the last two or three decades has betrayed any save the most perfunctory interest in special education or mental hygiene courses for either special-class or regular grade teachers.[2] Equally patent is the correlative fact that many of the journals that reach the large body of educationists or teachers have no room for special-education or mental hygiene articles except as they are condensed to the point of emasculation. None of the officially appointed committees or commissions, so far as known to the writer, has ever included in its membership an expert with first hand experience in the education of handicapped children who would be entitled, not as a matter of condescension but of intrinsic right to ask for a fair hearing for this "submerged tenth" of the school population. The conclusion, therefore, seems inescapable that the problem of training teachers for the field of special education and mental hygiene has been largely non-existent for association or survey committees concerned with teacher-training or it has been regarded as too insignificant to merit serious consideration.

The most recent study of the problem of the education of teachers was made by a committee of the National Society of College Teachers of Education in 1934 and 1935.[3] This committee, although it consisted of 18 members, did not contain a single recognized authority in the field of special education or mental hygiene. Upon learning of this projected committee investigation the writer took occasion to write to the then President of the Society calling attention to the fact that there was "no one on the committee especially qualified by training to represent the problem of the training of special-class teachers," and emphasizing that proper returns were not always realized in the education of handicapped children because of the existing inadequacy of the teacher-training facilities and of the certification requirements for special-class teachers. The suggestion was ventured that "this important phase of educational and social service" should have "adequate representation" and that the committee should become conversant with the fact that the Hoover White House Conference on Child Health and Protection (the appropriate ref-

[2] The writer in numerous official reports has called attention to the need of reorganizing the regular teacher-training curricula so as to include a number of basic orientation courses in special education and mental hygiene and on handicapped children. The Delaware White House Conference on Child Health and Protection endorsed these recommendations, in conformity with the report of the corresponding Hoover Conference.

[3] The Education of Teachers, Yearbook XXIII of the National Society of College Teachers of Education, 1935.

erence being supplied) had "made significant recommendations regarding courses some of which should be pursued by all teachers preparing for elementary school service and some of which should be pursued by teachers of different kinds of handicapped children." But the effect of the suggestion was nil so far as concerns obtaining any representation for the field of special education in the committee personnel.

In spite of this neglect, however, the subcommittee of the National Society which formulated a set of principles of curriculum construction did recommend that there should be a differentiation of the curricula for the following "specialized types of teaching:"

"(a) for the distinctly atypical groups, such as serious mental deficiency, blind and very limited vision, deaf and very hard-of-hearing, crippled children, behavior cases;

(b) for corrective and remedial groups, in school achievement, in speech defects, in emotional disorders, in physical disabilities, including low vitality." (Op. cit., p. 87.)

The intent of this formulation, however tangled the phraseology may be, is praiseworthy. The National Society of College Teachers of Education has thus at least recognized the existence of the problem. Nevertheless, the scant attention that the committees, commissions, or boards concerned with standardizing teacher-training curricula have devoted to the issues and needs of special-class teacher preparation and the preparation of regular-grade teachers for the education of deviating children, contrasts sharply with the consideration that the august American Medical Association has given even to the preparation of physiotherapists and clinical laboratory technicians. Certainly the niche occupied by physiotherapists and laboratory technicians in the broad domain of medicine is no more important than the role played by teachers in various kinds of special classes in the broad field of education. Obviously there is no more justification for the failure of committees or councils of education associations to come to grips with this important specialized problem in education than there would be for the Council on Medical Education of the American Medical Association to ignore the specialized fields in medical practice which the general medical practitioner might choose to belittle because such fields, in his estimation, are relatively restricted or relatively unimportant. Irrespective of whether or not the different fields of special education are relatively minor ones in the estimation of the general educationist, the problems involved in the efficient administration of the instructional procedures in these areas are just as vital to the welfare of

every child enrolled in a special class and to the social weal in general as is efficient instruction in the regular grades to every child enrolled in those classes.

The teacher-training problems in the field of special education cannot be dodged by the technique used by the ostrich when he chooses not to face the irksome facts of reality. In point of fact the problem of preparing teachers for special-class work is, if anything, more highly specialized and difficult than the problem of preparing teachers for the regular grades.

Fortunately for this Association and for the handicapped childhood of the nation, however, one organization, national in scope and genuinely concerned with the improvement of the health, efficiency, and happiness of the country's juvenile population, recognized the importance of providing well-trained teachers for special classes. The Hoover White House Conference on Child Health and Protection, the first of such White House Conferences so to do, specifically recognized the existence of the field of special education for deviating and maladjusted children by creating a committee of experts selected from the nation at large whose particular function it was to explore all the areas affecting the education of deviating children. This committee considered the question of the teaching personnel so important that it established a subcommittee whose specific job was to investigate the problem of teacher-training and to formulate prerequisites and detailed curricular requirements for eligibility as special-class teachers.[4] The teacher-training requirements were also studied by many of the other sub-committees of the main special education committee, who likewise filed recommendations regarding the training of teachers for the kinds of handicapped children with whom they were concerned, such as the sub-committees on the blind and partially seeing,[5] on the deaf and the hard-of-hearing,[6] on the speech defective,[7] and on behavior cases.[8] That there was little or no collaboration between these committees and the officially designated committee on teacher-training, due in part perhaps to time limitations, is unfortunate, for such collaboration might have ironed out some of the differences that exist in the

[4] See Special Education, The Handicapped and the Gifted, Section III, Education and Training, White House Conference on Child Health and Protection, 1931, 553-579.

[5] Op. cit., pp. 177-190.

[6] Op. cit., pp. 303-310.

[7] Op. cit., p. 380.

[8] Op. cit., pp. 523-528.

recommendations as they now appear in print. The present speaker, who was commissioned,[9] to draw up the detailed curricular requirements for teachers of about ten groups of handicapped children, did submit his schedules to certain members of the other committees, some of whom submitted pertinent comments, while others did not respond.

All that has been spoken thus far is merely intended to prepare the groundwork for the discussion of the topic assigned me, namely trends and needs in the training of teachers for special classes. The most favorable point of vantage from which to discuss that subject would seem to be, first to try to discover what influences, if any, have been exerted by the recommendations of the official committee on special-class teacher-training of the White House Conference on Child Health and Protection upon special-class teacher-training and certification requirements throughout the country during the six years that have elapsed since the report was published, and then to formulate recommendations for a constructive program of action based upon the demonstrated facts in the premises. It is entirely possible that the same fate may have befallen this report that has been the fate of so many reports of other national or state committees or commissions which have been promptly filed away in misty, out-of-the-way nooks and whose recommendations have been honored more in the breach than in the observance. In fact, there is support from the facts assembled for the suspicion that some certification authorities are entirely unaware of the existence of the White House Conference report.

In order to secure definite, up-to-the-minute information on this major issue, the writer dispatched a brief inquiry to the state superintendents or commissioners of public instruction in all the states east of the Mississippi River, including Minnesota and Louisiana, and to the school superintendents in the thirteen cities of the country having a population of 500,000 and more according to the 1930 census. The information requested included, to quote, "the regulations and requirements now in

[9] Apparently because he had been commissioned by the Baltimore education authorities only a short time before to perform a similar service for the Baltimore Schools. Wallin, J. E. Wallace, "The Baltimore Plan of Training Special-Class Teachers and Other Workers in the Field of Special Education," *The Elementary School Journal* (1931), pp. 607-618. The results of a survey conducted for the Ohio State Department of Education, which included data on special-class teacher certification requirements in numerous states, finished one or two years earlier, were made available to some of the White House Conference Committees. The results of this investigation were not published until 1934, when an abstract appeared in the Training School Bulletin, under the title, State Provision for Mentally Handicapped School Children in the United States. See the *Training School Bulletin* (1934), 21-30, 51-57, 69-76.

force for the approval or certification of special-class teachers for all kinds of handicapped children which I wish to analyze in connection with an address before the International Council for Exceptional Children. . . . What changes have you made in the requirements since 1931?'' The arbitrary limitation of the survey to the above states and cities was due purely to the lateness of the date of the request for this paper and to the lack of time in the midst of a busy schedule to compile extensive data. Replies were received from all the states except Louisiana, South Carolina, and Maryland and from all the cities except Chicago, Cleveland, and Buffalo. No replies were received from follow-up inquiries sent to Connecticut and Wisconsin. The information received from these states is too general to be used.

Before summarizing the findings of the survey, let us get before us the main recommendations of the official committee on the Training of Teachers of the Committee on Special Education of the Hoover White House Conference, which will be referred to hereafter as the Hoover official committee or the official committee. They are:

1. Certain orientation courses dealing with physically and mentally handicapped children should be added to the required courses for all elementary school teachers for various reasons, chief of which perhaps is the circumstance that the large majority of handicapped children spend their entire school life in the regular grades and probably will continue so to do for a long time to come. The amount of such required work should vary in terms of semester hours from four to sixteen according as the curriculum covers two, three, or four years. The following were included among these orientation courses.

The study and education of handicapped children, remedial instruction, mental and educational hygiene, clinical and abnormal psychology, and diversified industrial arts.

2. The prerequisite training for special class work should be the completion of the ''regular course for teachers of normal children, preferably in the elementary grades,'' and experience in teaching ''normal children for at least two years.'' However, the committee was of the opinion that when the course is lengthened to three or four years, perhaps the ''final year might be devoted to special-class preparation'' and that a certain ''minimum of teaching contact with normal children'' might suffice.

3. All special-class teachers should pursue the common, basic orientation courses in special education referred to under 1 above.

4. "All special-class teachers should, in addition, secure technical training for the particular type of work which they wish to pursue," such as the teaching of the blind, deaf, crippled, speech defective, mentally deficient, and the like."

5. "The standard requirement before teachers have received their final certificates should be one year of specialized training (30 semester hours of credit)" in all "fields in which a high degree of specialization is possible." "This standard of required work," in the judgment of the committee, "is justified in all school systems which offer a salary differential of $100 or more to special-class teachers."

6. Detailed schedules of courses yielding from 20 to 30 or more semester hours of credit were outlined for teachers of the mentally retarded, behavior cases, deaf, hard-of-hearing, speech defectives, the visually handicapped, the orthopedic, children in open-air classes, physiotherapists, and visiting teachers.

Now, what do the results of the survey show? Were the speaker talking "off the record," he would be tempted to say that the effects of the recommendations of the official committee (and also of all the other subcommittees of the Committee on Special Education of the Hoover White House Conference, of L. M. Schleier whose survey of *"Problems in the Training of Certain Special-Class Teachers"* also appeared in print in 1931 and of W. B. Featherstone whose *Curriculum of the Special Class* appeared in 1932) fall dangerously close to nullity when measured by the progress as a whole thus far actually accomplished in the extensive areas included in the survey. Such a broad generalization, however, might not be justified by our soundings which may be too highly colored by mere surface outcroppings. It is, of course, possible that the cumulative effects of the official report (and of other reports which appeared the same year) may have acted as subtle ferments or irritants, the effects of which may not be readily apparent on the surface but which, nevertheless, may have enabled some authorities to hold the fort against reaction or retreat and which may have assisted others to prepare the way for eventual advance. In addition, in one or two states, in which the certification requirements were adopted about the time the White House Conference recommendations appeared, the standards adopted may have been influenced by the official report.

But now to the results of the survey and the implications and conclusions which they suggest! Only the briefest summary is possible because of space and time limitations.

The following states and cities did not prior to 1931 nor do they now require any training of public school special-class teachers other than that required for the regular grades: Alabama, Florida, Georgia, Maine, Mississippi, New Hampshire, North Carolina, Rhode Island, Tennessee, Virginia, and West Virginia, and also, perhaps, Louisiana, South Carolina, and Maryland which failed to reply, and Los Angeles.

No increases in the special-education course requirements have occurred, so far as can be ascertained from the replies, in the following states and cities which already had established certain specific standards which seem to continue in *status quo*:

Illinois, which since 1929 has required a "certificate of qualification" for teachers of the deaf based on "instruction in the method of teaching the deaf for a term of not less than one year," while teachers of the blind and defective vision must possess the "benefit of special training approved by the superintendent of public instruction." Equally indefinite is the special requirement for teachers of crippled children, who must possess the "usual qualifications required of teachers in public schools and in addition such special training as the board of education, board of school inspectors or school directors, or superintendent of public instruction may require." The requirement for teachers of delinquents is similarly vague, namely a "certificate of qualification for teaching in such school or schools as provided by law."

Indiana, in which the requirements, apparently applicable to teachers of the mentally handicapped only, are a first grade elementary school license based on a two-year elementary course plus 20 semester hours in certain specified special-education courses in the case of applicants with four years or more of teaching experience and 30 semester hours for teachers of less than four years of experience, such experience, apparently, referring to the regular grades. Many of the required courses are included in the recommendations of the official committee.

Massachusetts, which has "no State laws requiring certain qualifications for teachers in the field of handicapped children," although the department of education "strongly recommends that all school officials should require that all new teachers employed in the education of mentally retarded children shall have been graduated from a teachers college with the addition of at least one year or the equivalent in specialized training. Teachers of the deaf, blind, hard-of-hearing, speech defective and other special classes must meet with the approval of the Department of Education." What specific course requirements must be met to secure

such approval is not disclosed. It is expected that a proposed teachers' certification bill will "set forth certain specific qualifications for all teachers of the handicapped."

Michigan, in which special-class teachers must hold a life certificate issued upon the completion of the four-years' course for the baccalaureate which includes a minimum of 20 semester hours in professional training and also a "major of 24 semester hours or a minor of 15 semester hours in the field in which they expect to teach." Special-class certificates have not yet been authorized nor have the specific requirements for the prescribed majors or minors in special education courses been designated. The prerequisites include neither the preliminary completion of the curriculum for the regular grades nor prior teaching experience in such grades. The Detroit and the state requirements, apparently, coincide.

Minnesota, in which since September, 1931, qualified elementary school teachers who have graduated from a two-year normal school, who have had a minimum of two years of "experience in teaching," apparently in the regular grades, and who have completed 20 quarter hours of "well balanced special training" or teachers of "equivalent qualifications," are eligible for an elementary school special certificate for teaching sub-normal, deaf, blind, speech defective and crippled children and occupational therapists, renewable for five years after one year of successful experience and transformable to permanent licenses after five years of "successful teaching of such classes." However, in 1936, slight changes in the schedule of designated courses appear, possibly reflecting some effect of the official report, while qualifications for supervisors have also been set up.

Missouri, whose minimum requirements since 1921 have been not less than a two years' course in a standard normal school or college and not less than eight semester hours credit in courses especially designed for teaching the mentally deficient, backward, deaf, blind, crippled, and speech defective, the suggested courses being indicated for each area. "Young teachers who are nervously stable, patient, and interested in the welfare of the children, and who have done a strong grade of primary work" are preferred for the classes for the mentally deficient. St. Louis, according to the reply, has not advanced beyond the minimum state requirement.

New York State in September, 1936, lengthened the course for "teaching common branch subjects" to three years but none of the courses recommended by the Hoover official committee for inclusion among re-

quired courses for grade teachers was added. The minimum number of semester hours in special education courses required of special-class teachers remains the same, namely 12. However, the particular courses required of teachers of cardiopathic, orthopedic, deaf, and hard-of-hearing children, children in lip-reading and open-air classes, and possibly in classes for the mentally handicapped, have been set out in more detail. It is possible that the specific course suggestions offered in the Hoover official report may be reflected to some extent in the schedules adopted. The New York City requirements appear substantially to duplicate the State standards except that the licentiate must possess "a baccalaureate degree or equivalent preparation," one year of appropriate special-class teaching or three years of teaching in elementary or junior high schools and in addition thereto pass a qualifying examination. The setup of required courses apparently differs slightly from the State's schedules.

Pennsylvania continues to require 20 semester hours of special training applicable to teachers in all kinds of special classes, which, however, may include from 8 to 10 hours of experience in teaching or in health or social service work, thus reducing the required courses to from 10 to 12 semester hours. In addition to the special training, 50 semester hours of other post high school training is required, which is somewhat less than the requirement of a standard two-years' normal school course. In a written communication it is intimated that while no prior teaching experience is required in the regular grades, "practically all applicants" for special classes have had one or more years of such experience and "hold some form of standard certificate." The extension of the elementary teacher training course to a minimum of three years is now in contemplation.

The Pittsburgh and Philadelphia standards are in harmony with the State requirements except that all teachers must possess four years of post high school preparation. Philadelphia also requires that the eligibles must have had at least two years of approved teaching experience and pass an eligibility examination.

Among cities which may be included under this rubric are Baltimore, Boston, Detroit, Milwaukee, and Washington.

The Baltimore schedules of courses, on which the Hoover official recommendations are largely based, apparently continue the requirement of 30 semester hours of special training for teachers of the mentally handicapped for eligibility for the maximum salary differential, but the course requirements for teachers of all kinds of physically handicapped children

were reduced to 14 credit hours in December, 1936. "Elected elementary teachers in the Baltimore public schools may be transferred to positions as teachers of classes in the Division of Special Education, provided they have had at least two years of approved teaching experience in the elementary grades or in classes similar to those in the Division of Special Education," and provided further they "successfully pass a qualifying examination" and possess the "adaptability required for the type of work for which they are candidates." Training qualifications for teachers of shop and related subjects have been established based on eight credits in approved special education courses.

In Boston a teacher is eligible for appointment to a class for the mentally handicapped who has merely graduated from an approved high school and in addition thereto possesses either one year of successful experience in teaching such a class or in lieu thereof two years' successful experience on permanent appointment in the regular graded city day schools, provided he has earned about six semester credits in approved special-education courses. Although a college degree is required for appointment as a grade teacher in Boston, a teacher of the mentally handicapped need not be a normal school graduate. However, it is now proposed to require college graduation for special-class teachers also.

While Milwaukee in 1934 added the requirement of a bachelor's degree for special-class as well as for regular-grade teachers, in addition to satisfactory teaching experience and a Wisconsin unlimited license, no specific special-education course requirements have been formulated, but graduates of the special-education department of the Milwaukee State Teachers College receive preference in appointment.

Washington requires two appropriate courses yielding two semester credit hours each of teachers of speech correction, atypical and incorrigible children, health, and Americanization in addition to, or as a part of, courses leading to a bachelor's degree which must include 40 semester credits in the general field of education. The requirement of the baccalaureate degree, basic for all teaching appointments, went into effect in 1933.

The states and cities that have scored advances or increased the requirements in certain areas since 1931 include the following:

Delaware, which in September, 1935, authorized the issuance for a period of two years of a "one-year temporary certificate" renewable as other certificates are renewed, to a "person who is a college graduate on the recommendation of the Director of Special Classes," the director hav-

ing recommended as a minimum standard for certification the completion of courses listed in the Hoover official report yielding at least 18 semester hours of credit, the said list of courses having previously been formally adopted by the Board of Public Education in Wilmington. In October, 1934, Delaware ceased issuing any certificates for elementary school teachers lower than the Collegiate Certificate in Elementary Education, which requires a four year college course and which may include the required special education courses for special-class teachers. However, the lengthening of the curriculum from two to four years for elementary school teachers merely represents the addition of two more years of post high school courses in academic subject matter or in so-called "cultural courses."

Ohio, apparently, does not yet require any special certificate or credential for teachers of the mentally handicapped, but for teachers in orthopedic classes, the requirement of six weeks of special training has been added to the minimum requirement of a regular two years' teacher training course and three years of successful public school experience, the same standard which previously applied to teachers of sight-saving classes. Two years of special training instead of one must now be possessed by new appointees to classes for the deaf who have not had experience in teaching children of normal hearing, and who must also possess two years of college work or its equivalent.

San Francisco, in conformity with the standards adopted by the State Department of Education, apparently in 1935, now requires from teachers of the deaf, hard-of-hearing, and speech defectives, "a valid California teacher's certificate, credential or life certificate," two years of successful teaching experience or four semester hours of superior directed teaching, apparently with normal children, and in addition thereto twelve semester hours of special work for teachers of speech correction and lip-reading and 38 hours of such work for teachers of the deaf.[10] Some influence from the official Hoover report is perhaps discernible in the California standards.

Does this concise summarization of findings reveal any definite trends since the issuance of the official recommendations in 1931?

Perhaps the best that can be said for this period, which has been one of unparalleled economic dislocation, is that little evidence of retrogression

[10] Requirements have also been adopted for teachers of deafened adults and for instructors of teachers of lip-reading.

has appeared in special-class teacher-training requirements. The battle lines have been held fairly intact. There has been no concerted sounding of retreat orders. This alone might be regarded as an accomplishment of no mean magnitude. On the positive side, progress is discernible here and there, but it is exceedingly "spotty" in character. There has been no advance in a large portion of the geographical areas under review and no evidence has been disclosed of any strong, pervasive, progressive mass trends during this period, such as have appeared at various times in the fields of vocational education, character education, adult education, health education, and the like. One distinct advance is worthy of record in a field not included within the limited purview of this inquiry, namely the improvement of special-class teacher training facilities in two universities.

In September, 1936, Teachers College of Columbia University consolidated and coördinated its rich variety of courses for teachers of physically and mentally handicapped children into one department of The Education of the Handicapped and in addition thereto enlarged the scope of its offerings. Wayne University in Detroit established a department of Special Education of Handicapped Children which is now offering a considerable variety of courses for teachers of the mentally and physically handicapped. Some of the courses offered in these institutions apparently show traces of the work of the official committee. Incidentally, it may here be remarked that a cursory examination of the catalogues of various institutions throughout the country offering special education courses recalls to the writer Schleier's comment after he had listed the different topics treated in a single special-education course. "A close examination of the table will show that with the exception of a very small number of topics, there seems to be no general agreement as to what this course should include."[11] The lack of uniformity disclosed in the titles of the array of courses now offered in many institutions doubtless does not adequately mirror the greater lack of uniformity in the contents of the courses themselves.

So much for the findings of the survey. Now what are the implications or the deductions so far as concerns the problem of the staffing of all kinds of special classes with well-prepared, efficient, adaptable teachers? Without progress, the law of life is stagnation and dry rot. Progress cannot be achieved merely by a defensive campaign. Victory requires the courage and capacity to move forward offensively on all the major battlefronts

[11] Op. cit., 48.

of the fray. Taking the country as a whole, no informed person will question the admission that great improvement is possible, desirable, and necessary in the certification requirements for teachers of special classes and in the setup of specialized courses required as a preliminary thereto. How can this desirable goal be most expeditiously and effectively achieved? Do not the data presented in this brief overview of standardizing requirements for professional workers point to the conclusion that the International Council for Exceptional Children, the only independent nationwide organization dealing with the education of all kinds of deviating children, is the proper agency to attack this problem, resolutely and unflaggingly, through a properly constituted commission or committee, just as the American Medical Association, the American Bar Association, the Engineers' Council for Professional Development, and other associations have, through appointed committees, successfully handled similar problems in their own spheres. In fact, in the field of special education the National Society for the Prevention of Blindness and the Conferences of Executives of American Schools for the Deaf have in a measure already performed the same service. The qualification standards which they have formulated for teachers of the visually and auditorially handicapped have been instrumental in securing some measure of improvement in those areas of our field. Is there any other organization more capable of serving as the coördinating and directing agency to assemble, sift, evaluate, and standardize the recommendations concerning professional qualifications that come from the varied groups that are garrisoned on its far flung fronts?

The challenge that the problem presents is not difficult to state. It is not merely to assemble the facts, to make them known to members of this Council, to pass fervent appeals and resolutions, and then adjourn, and promptly forget about the whole matter. Such measures without the necessary follow-up campaign for action often prove to be futile gestures. What the problem demands is the publicizing of findings, conclusions, and recommendations not only in the official organ of the Council but also in the general educational journals and among state and city school superintendents and boards of education, deans of departments of education, heads of institutions concerned with the training of teachers, the executive officers of state and national education associations, and the members of appropriate survey commissions. Not only so, there must follow the circularizing of appropriate follow-up summaries at strategic points and especially indefatigable efforts to secure the indispensable official

action needed to translate the recommendations into a program of accomplishments.

What, now, are some of the key problems in the field of teacher-training that should be investigated and reported upon by delegated committees on which the Council should formulate its conclusions and recommendations, and attempt to get them translated into action? The problems may be stated in the form of queries.

1. What should be the specific courses required of different kinds of special-class teachers and what should be the standard requirement in each course in terms of credit hours? Should the standardization of the course requirements be as specific as that of the Council of Medical Education and Hospitals of the American Medical Associations? What general orientation courses in the field of special education and mental hygiene should be required of all special-class teachers irrespective of the field of specialization?

Should the schedules of courses for teachers in different kinds of special classes proposed by the Hoover official committee be adopted as the official standards of this Council? If not, what specific changes should be made? The Hoover standards were offered not as final ultimates but as 'something definite and specific to shoot at,' on the assumption that vague generalities would bring us no farther in the field of special education than they did in medical education, prior to the work of the Council of Medical Education.

2. Is the recommendation of the Hoover official committee sound that one year of specialized training should be required of special-class teachers for complete certification when a reasonable salary differential is provided? Is this standard excessive or too lenient? Should the requirement be the same in all sectors of the special-education field, or should it vary according to the complexity or difficulty of each particular field and according to the degree of specialization essential in each type of work?

Should it be the same for college graduates as for normal school graduates and for experienced as for inexperienced teachers? Should the special education credits constitute a part of the requirements for the normal school diploma and the college degree or should they constitute an additional load? What should be the minimum certification requirement or standard for emergency or temporary certificates?

3. Is the conclusion of the official committee sound, that "It is advisable that teachers before preparing for special-class teaching should first have completed the regular course for teachers of normal children, pref-

erably in the elementary grades, and also should have taught normal children for at least two years," and that it is desirable even for graduates of three- or four-year teacher-training courses to secure at least "a minimum of teaching contact with normal children?" If this stipulation should be waived, what proposal should be substituted?

4. What relation, if any, does salary differential sustain to the problem of staffing the special classes with competent teachers? Is it possible to secure such teachers without a reasonable differential? Is it proper and just to require a teacher to spend much time and expense to prepare to become a specialist in some phase of special education without some compensating reward? What has been the experience of different school systems with respect to this question? How many now offer salary differentials to special-class teachers? For what kinds of special classes do the teachers receive salary increases? How do the increases differ for different kinds of special-class work? On what grounds do they justify such grants? What are the arguments for and against special-class salary differentials? What valid principles, if any, can be formulated in defense of the practice of salary differentiation? What would result if the differentials were withheld?

5. Is the conclusion of the official committee tenable that all teachers, principals, and general supervisors in the public schools, especially in the elementary schools, and perhaps also in the junior high schools, should be required to take a certain number of basic orientation courses in special education and mental hygiene? If so, are the courses recommended by the official committee acceptable? If the answer is affirmative, what steps can be taken to give force and effect to a recommendation that has thus far remained a dead letter even in states that have extended the curriculum to three or four years?[12]

What effective measures can be taken by this Council to secure the introduction of such courses as these in the expanded curricula rather than the addition of more advanced types of the same kinds of academic content courses that have constituted the daily cultural pabulum of the student from the elementary level up?

6. What should be the basis for approving the courses offered for special-class teachers and for accrediting the institutions that offer them? What supplies, classroom equipment, clinical, observational, and practice-

[12] To the states already referred to should be added Maryland, which has been offering four-year curricula in its Teachers Colleges since May, 1934, although it has added a course on behavior problems.

teaching facilities, libraries, trained professional personnel, and the like should the institution possess? What should be the qualifications of the instructors? Should courses be accredited which are offered by a "general psychologist" or 'general educationist' who has had no first-hand contact with the types of handicapped children concerned, either clinical, instructional, supervisory, or administrative and who, forsooth, may never have seen the inside of a special-class? It is notorious that special-class teachers during the past quarter century in attendance at institutions unqualified to offer appropriate courses have frequently been sidetracked into nondescript, heterogeneous courses offered by theoretic academicians which have been of little value to them, and which have sometimes proved to be worse than useless because of the misleading instruction that has been imparted. Do the holding of an academic chair and the possession of a higher academic degree constitute essential qualifications for a successful instructor of special-class teachers? Will such qualifications take the place of first-hand experience with the actual classroom problems?

Should institutions not chartered to grant credits be accredited for educating special-class teachers? What are the types of institutions that should be accredited for preparing special-class teachers? In what geographical areas are the special-class teacher-training facilities ample? What areas are wholly without adequate facilities?

7. Perhaps before we venture to answer such questions as the above we ought to address ourselves to a more fundamental question, namely: What justification is there for maintaining any special classes at all? Should we not proceed to abolish them as an excrescence in our public school development that is foreign to our concepts of democracy and inimical to the best cultural development and wholesome personality growth of handicapped children? That this is not merely an academic question may be deduced from the following quotation from the conclusions widely publicized in various kinds of periodicals by the Study Group on the Exceptional Child of the Association of Childhood Education which met in New York from April 30 to May 2, 1936:

"We believe that a general school policy of *flexible grouping* rather than one of segregation is more conducive to making these services effective, and that complete segregation while a convenient administrative device does not provide the best conditions for desirable growth and development of children. . . . We believe that the undesirable influence of segregation on handicapped children is of sufficient importance that the

Executive Board of the Association of Childhood Education should give serious consideration to the problems involved. We ask that the Executive Board . . . request the Federal Commissioner of Education to take this matter under advisement in any program that is being considered for the education of handicapped children."

Precisely what does the Study Group on the Exceptional Child of this Association imply in this sweeping indictment? Does it mean that every special class should be abolished and that all handicapped children should be returned to the regular grades? Does it imply that the alleged evils to which it refers do not also exist, and have existed from time immemorial, in the regular grades? Does it consider that repeated failure in the regular grades is superior to successful achievement in the special classes? Or would it automatically promote imbeciles, morons, and borderline cases into the junior and senior high schools irrespective of their achievement level in accordance with certain doctrines now proclaimed from the housetops?

Does not the Study Group realize that the manifest drawbacks incident to the enforced continued retention of seriously handicapped children in the regular grades, which led to the establishment of special classes, have been only partly remedied by the freer activity programs of the modern progessive schools, and that many of the untoward results of retaining such children in the regular grades still continue? Among such results are the engendering of feelings of frustration, inferiority, unworthiness, and failure or resentment, rebelliousness, or malbehavior because of invidious comparisons, taunts, ridicule, criticism, and unjust and unequal competition with superior classmates, and waste of time, money, and energy from the inability to adapt the teaching techniques and contents in the regular grades to the needs of the deviate. Not infrequently the result is deepseated embitterment from the sheer neglect and lack of recognition which the handicapped child often suffers in the over-crowded grades. Is not the Study Group aware of the fact that countless numbers of handicapped children have taken on a new lease of life after assignment to the right kind of special class, following a careful clinical examination, in which they secured proper recognition and were given the chance to experience the joy of success? That the interests of isolated cases have not been well served by improper transfer to special classes is freely conceded. But do isolated cases justify an indictment of the whole system?

It is not an easy task to answer the Study Group without knowing

precisely what is included in its generalization. Are we to understand that no child with any kind of handicap whatsoever, howsoever grave, should ever be assigned to a special class either on full-time or part-time or even temporarily? Or does the interdiction apply only to the transfer of a child to the wrong kind of special class or against its desire if a prejudice has been aroused against the class by the parents or by teachers or by other children or by threats of transfer as a form of punishment? To ascertain just what is involved in this sweeping recommendation and who the members of the Study Group were, the writer addressed an inquiry to a member of the group, asking particularly whether the group referred to all kinds of handicapped children, such as the crippled, the deaf, blind, speech-defective, cardiopathic, malnourished, and mentally defective. It appears from the roster that not more than one or two members of the group had had any direct teaching or administrative contact with public-school special classes and no one has published any carefully controlled comparative study of the relative evils of keeping handicapped children in the regular grades or in special classes organized to meet their peculiar disabilities. "You will understand, of course," said the respondent, "that in all the discussion the study group referred to the public school situation and the children for whom the public school is responsible. Since strictly feeble-minded children are not admitted to public school, the discussion did not include them." To this the writer replied: "Unfortunately the vast majority of mentally deficient or feeble-minded children are not in the colonies and institutions, but in the public schools. I base this judgment on first-hand clinical contact with the public school situation in seven states in which I have been examining children. Is it the conclusion of Study Group No. 10 that all these children who are now in special classes in the public schools should be returned to the regular grades? May I also inquire whether it is the conclusion of this Study Group that all the blind, deaf, visually and auditorially handicapped and crippled children should be kept in the regular grade rather than in special classes?" To this query no response has thus far been forthcoming. The Study Group of the Association of Childhood Education has boldly thrown down the gage of battle. Can this Council meet the challenge? If not, the plea of this discourse is without merit, except perhaps so far as concerns the training of regular grade teachers for the education of exceptional children, and the justification for the continued existence of this Council for Exceptional Children may well be questioned.

THE SIGNIFICANCE OF ACADEMIC ACHIEVEMENT IN THE GUIDANCE OF VOCATIONAL STUDENTS

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IN the modern junior high school with its enriched curricula and elective courses, educational guidance has a very definite and increasingly important place. However, the responsibility for carrying on a guidance program is one which teachers assume with some degree of reluctance, being aware that certain factors make this type of work extremely difficult.

Educational guidance is not new, but educational guidance as an integral part of the school curriculum is new, requiring methods, techniques, and criteria which are still in the process of formulation. So it is, that, at the present time, in the absence of concrete data, teacher judgment too often becomes the determining factor in carrying on guidance work. Naturally, the validity of a practice so subjective in nature can be questioned.

The study described in this article is an outgrowth of experience in the guidance of boys in the Indianapolis Public Schools who have the choice, at the completion of the eighth grade, of continuing their academic work or enrolling in vocational classes in Arsenal Technical High School. This experience has created, on the part of the writer, a very keen realization of the over-emphasis that has been placed upon teacher judgment in the solution of this particular problem in educational guidance.

In an attempt to formulate certain conclusions that might be of value in directing those boys making the choice between continuing their education in academic or vocational fields, a comparison has been made of the academic grades made by sixty-three boys in their eighth grade work with the vocational grades made by the same boys in their ninth year work. The findings of this study indicated certain conclusions which might prove to be of some assistance in the solution of that guidance problem with which this writer was especially concerned.

Defining the terms that have been used in the statement of the problem attacked in this study, it may be well to explain that academic work refers to the subjects, English, mathematics, and social studies, taught as indicated in the Indianapolis courses of study for the eighth year. Vocational courses include those classes in general shop and related subjects which make up the first half of an intensive two year vocational course offered at Arsenal Technical High School.

The grades used in this study, in each case, were taken directly from the child's record on file in the principal's office. Although these grades were expressed by letters, to facilitate their interpretation and compilation, they were given percent values. Each letter has been given that percent value represented by the lower limit of the interval of percents which it indicates; for example, the mark A +, showing superior work and having the percent value of 95–100, has, for the purpose of this investigation been evaluated as 95 percent. The same method has been used in the case of the letters A, B, C, and D, the last mark showing work below 70 percent and indicating failure, has been given the value of 60 percent. Each grade represents in part the quality of the pupil's work and in part the standard of excellence accepted by the instructor. The findings should be interpreted with this fact in mind.

The method of attacking this problem included, first, the selection of a number of boys whose grades would serve as a basis for this study and who would be as nearly typical of boys in the average junior high school

TABLE I

ACADEMIC GRADES—8TH YEAR

S	F
95	0
90	1
85	3
80	10
75	8
70	18
65	11
60	12
	63

Median — 72.52 Q^1 — 66.70
Mean — 72.96 Q^3 — 78.80

TABLE II

VOCATIONAL GRADES—9TH YEAR

S	F
95	3
90	9
85	4
80	18
75	6
70	13
65	5
60	5
	63

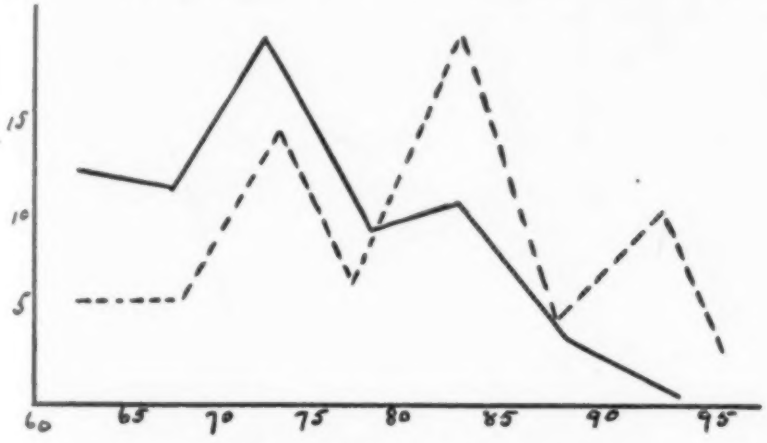
Median — 80.5 Q^1 — 72.1
Mean — 79.63 Q^3 — 85.31

as was possible to find. No attempt was made to select these boys in reference to their weakness or their strength in any particular line of work. In fact, the selection of these sixty-three boys whose grades were to serve as the basis of this study might be described as random choice.

Second, the grades of the boys selected were tabulated, evaluated on the percent basis, averaged and recorded in sets of tables which provided the data from which this study proceeded.

The presentation of the findings resulting from the compilation and comparison of these academic and vocational averages, appears in Tables I and II.

A comparison of the material presented in Table I with the data appearing in Table II, is given graphically in Figure I. Attention is called to the consistently higher grade of work done in the vocational work.



Academic Grades ————
Vocational Grades - - - - - - - - - - -

FIGURE I
VOCATIONAL AND ACADEMIC GRADES

In order to continue a comparison of the academic and vocational grades of the boys, a division has been made into three groups on the basis of their academic achievement, for that was the standard of work which they set first; therefore, all the vocational marks are compared as higher or lower than the academic marks. Those boys whose academic averages ranged from 80 percent through 95 percent are placed in the high group. This includes fourteen boys. This proportionately small number of boys

in the high group can be accounted for by the fact that those boys whose academic grades are consistently high, do not elect vocational courses for their ninth year work; rather they elect subjects required for high school graduation if not for college preparation. This naturally limits the number of boys who fall in this high academic group. However, the nature of the comparisons made in this study is such that equal distribution among the three groups is not essential.

The second group is designated as the "Middle Group," and includes those boys whose grades ranged from 70 percent through 79 percent; there are twenty-six boys in this group. The third group, "The Low Group," includes twenty-three boys who had grades which averaged 69 percent or lower.

Tables III, IV, and V present the academic average of each boy in his respective group, with his vocational average appearing for comparison. Also, in each case, the percent of improvement or percent of loss shown in the vocational work when compared with the academic, is indicated.

TABLE III

COMPARISON OF ACADEMIC AND VOCATIONAL GRADES—HIGH GROUP

Pupil	Academic Grade Avg.	Vocational Grade Avg.	Percent Improvement Shown in Voc. Work	Percent Loss Shown in Vocational Work
A(1)	90	75		16.6
B(1)	86	90	4.5	
C(1)	86	90	4.5	
D(1)	86	80		7.0
E(1)	83	95	14.0	
F(1)	83	90	8.0	
G(1)	83	85	1.5	
H(1)	83	80		4.0
I(1)	83	80		4.0
J(1)	80	85	6.6	
K(1)	80	80	0.0	0.0
L(1)	80	80	0.0	0.0
M(1)	80	75		6.6
N(1)	80	70		12.5

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Table V, which follows, presents certain interesting indications, indications which contribute more to the conclusions obtained from this study than do any of the preceding comparisons. This group, as explained previously, is composed of those boys whose academic work was of such low standard as to average in the failure class. When the vocational average was recorded in comparison with the academic, in eighteen of the twenty-

TABLE IV

COMPARISON OF THE ACADEMIC AND VOCATIONAL GRADES OF THE MIDDLE GROUP

Pupils	Academic Grade Avg.	Vocational Grade Avg.	Percent Improvement Shown in Voc. Work	Percent Loss Shown in Voc. Work
A(2)	76	90	18.0	
B(2)	76	80	5.5	
C(2)	76	80	5.5	
D(2)	76	80	5.5	
E(2)	76	77	1.3	
F(2)	76	70		6.6
G(2)	76	70		6.6
H(2)	76	70		6.6
I(2)	73	80	10.0	
J(2)	73	80	10.0	
K(2)	73	70		4.0
L(2)	73	65		11.0
M(2)	73	60		17.0
N(2)	73	60		17.0
O(2)	70	92	21.0	
P(2)	70	92	31.0	
Q(2)	70	90	28.0	
R(2)	70	90	28.0	
S(2)	70	85	21.0	
T(2)	70	80	14.0	
U(2)	70	80	14.0	
V(2)	70	70	——	——
W(2)	70	70	——	——
X(2)	70	70	——	——
Y(2)	70	70	——	——
Z(2)	70	65		7.0

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three cases, or 78 percent of them, improvement was shown. The percent of improvement ranged from 3 percent to 51 percent. In the case of one boy, L(3), an academic average of 63 percent stood in contrast to a vocational average of 95 percent.

A summary of the comparisons made of the academic and vocational achievement of boys in the high, middle, and low groups, is shown in Table VI. The material appearing in this compilation is of real significance in the solution of the problem with which this study is concerned. A careful study of this table points most definitely to certain conclusions.

A study of the data presented in the foregoing material seems to justify the following conclusions:

1. In more than half the cases cited in this study of the achievement of sixty-three boys, the grades made in their vocational work were higher than those made by the same boys in their academic work.

TABLE V

COMPARISON OF ACADEMIC AND VOCATIONAL GRADES OF LOW GROUP

Pupils	Academic Grade Avg.	Vocational Grade Avg.	Percent Improvement Shown in Voc. Work	Percent Loss Shown in Vocational Work
A(3)	66	95	44.0	
B(3)	66	85	29.0	
C(3)	66	80	21.0	
D(3)	66	80	21.0	
E(3)	66	80	21.0	
F(3)	66	80	21.0	
G(3)	66	75	13.0	
H(3)	66	70	6.0	
I(3)	66	65		1.5
J(3)	66	65		1.5
K(3)	66	60		9.0
L(3)	63	95	51.0	
M(3)	63	92	46.0	
N(3)	63	80	27.0	
O(3)	63	75	19.0	
P(3)	63	75	19.0	
Q(3)	63	70	11.0	
R(3)	63	70	11.0	
S(3)	63	70	11.0	
T(3)	63	65	3.0	
U(3)	63	60		5.0
V(3)	63	60		5.9
W(3)	60	80	33.3	

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TABLE VI

SUMMARY OF COMPARISONS OF THE ACADEMIC AND VOCATIONAL GRADES OF THE THREE GROUPS

Group Divisions Based upon Academic Ratings	Improvement Shown in Vocational Work When Compared with Academic			Loss Shown in Vocational Work When Compared with Academic		
	No. Boys Gaining	Percent Boys Gaining	Average Percent Gained	No. Boys Showing Loss	Percent Boys Losing	Average Percent Loss
High Group (80-90)	6	43.0	6.6	6	43.0	7.6
Middle Group (70-79)	14	55.0	18.0	8	32.0	9.6
Low Group (60-70)	18	78.0	23.0	5	22.0	4.0
	38	60.3	15.8	19	30.1	7.0

2. In the comparison of the grades of these boys whose work served as the basis for this study, there were fewer failures in the vocational work than in the academic work.

3. In the cases of those boys included in this study, failure in academic work did not necessarily predict failure in their vocational work.

4. Certain boys whose academic grades indicated that their interests in this type of work were under-developed, had definite latent talents which were developed in their vocational classes.

5. A greater number of these sixty-three boys were able to realize a good or an excellent achievement grade in their vocational work than in their academic work.

6. The difference between the academic and the vocational grades of the majority of the boys as presented in the foregoing data, tends to indicate that the two types of courses are dissimilar in their essential characteristics.

7. The teachers in charge of the educational guidance of these sixty-three junior high school boys advised wisely in the cases of the majority of the members of this group.

In view of the conclusions that were reached as a result of the interpretation of the data presented in this study in educational guidance, the following recommendations are submitted:

1. Except in those cases where pupils are over-age or there is present a definite occupational interest, it might be well to advise those pupils doing satisfactory academic work in their eighth year, to take in their ninth year a combination of academic and pre-vocational courses leading to high school graduation, rather than to enroll in the intensive two year vocational courses.

2. Those pupils who are over-age and are doing failing academic work should be placed in industrial arts courses which will offer a wealth of occupational and exploratory experiences and which will give these boys every opportunity to find themselves before they reach that age at which they may legally drop out of school.

3. In educational guidance work, the most complete and accurate information possible, concerning all courses available to pupils, should be in the hands of those in charge of this work and should be a definite part of every junior high school guidance program.

These recommendations are an outgrowth of the findings indicated by the data provided by the comparison of the academic and vocational grades made by sixty-three boys in the Indianapolis Public Schools. In an effort to minimize the element of teacher judgment so much in use now in educational guidance programs, this material is offered as a type of criteria less subjective in character.

EDITORIAL

HOW VALIDATE THE QUALITY OF TEACHING

THE question raised in the above title may be illustrated by one of Abraham Lincoln's stories of himself. As a young lawyer preparing to get justice for his clients he wished to know the convincing principle by which to prove a case. To his question, "How can I know when I have proved a case?" his friend, whom he called the pedagogue, answered by referring to the study of Euclid's geometry and to applying that process of thinking which begins with the simple truth accepted by all good minds. The outcome in the character of Lincoln's entire life may, perhaps, be a partial validation of his pedagogue's instruction.

Every real teacher seeks to know when and how something may be added to the education of one or of all the pupils. This question goes deep into the relations of human experience, since it concerns the growth of minds through that common understanding with each other by which an added ability is developed. Many "pedagogues" have given their suggestions on the principles involved. Pestalozzi in "*How Gertrude Instructs Her Children,*" and in "*Leonard and Gertrude*" gives emphasis to the use of everyday practical situations. Froebel seeks a more subjective principle by which even infant minds have their earliest ideas satisfied by self-completed experiences in the ease and harmony of motion and of initiative constructions used in their play, also by social participation, and by physical, moral, and intellectual training. His *Education of Man* and *Mother Songs* are concerned with character building. The philosopher, Kant, gives organization to the educational situation by first analyzing the problem, and then synthesizing the processes. For him knowledge is gained only from a union of two factors of instruction. The first is supplied by experiences in contact with the environment, and the second is supplied by the structural activities of the human mind as it establishes controlling ideas by which life is guided. Only through the combined action of both factors are meanings discovered, ideals established, and purposeful activities carried out.

The significant thing for today in these century old visions of a better education for all the children, is their emphasis on the teacher-pupil

fellowship in the process. Mind needs to know mind in a way to recognize common meanings from experience with things, to understand like activities, to recognize ideals, and to carry out plans which look toward progressive attainments for all. There is a nurture in this relation of pupil and teacher which stimulates the learning activities to a sensitiveness for thought relations amounting often to new insights of broader and richer meanings for new and old knowledge. This is a quality of the educational outcome which needs to be better understood, and its possibilities measured on as valid a scale as can be devised for the purpose. However, this is but one of the elements which taken together constitute instruction by which organized knowledge develops the ability to think in a way to understand and use ideas in many relations to life.

Educational research has of necessity, first centered attention on the quantity attainment of pupils acquired from the course of study, and as provided by the textbooks. This is the element of instruction concerned with the knowledge of facts as organized from experience in each field of subject matter. Two other elements are recognized in the field of elementary education. One is that of mental age growth in ability to learn, and the other is the way to secure the thoughtful understanding needed to advance the use of new abilities toward organized thinking. These two elements are, at present, expected to be met as far as possible by the patience and skill of the teacher. Research is now needed to determine ways by which the teacher and the material available may be more definitely prepared to maintain an educational progress which constantly includes all of the essential elements for learning and for using knowledge. It needs to discover the way to maintain active mental situations that include experiences of the environment in a way to secure active thinking in various situations and which lead to new understandings of related ideas by which a feeling of values for new knowledge is maintained.

GEORGE A. BROWN

REVIEWS

Address all communications relative to book reviews to Editor Kai Jensen, University of Wisconsin, Madison, Wisconsin.

HOVIOUS, CAROL. *Flying the Printways: Experience Through Reading* (New York: D. C. Heath and Company, 1938), pp. xii + 525. $1.40.

A recent trend of high importance is the growing concern about the reading habits of junior and senior high school students. Fortunately the movement has progressed to the stage where certain school systems are planning or have already initiated programs for improving the rather prevalent deplorable status of reading in the upper classes. One of the handicaps to progress in such programs has been the dearth of organized material suitable for use at these levels. This book is one of the more successful attempts to furnish such material. It is designed for everyone "who would read with greater speed, accuracy, and intelligence."

Material and exercises are furnished for the development of skill in finding main ideas, finding significant words, grouping of words, connecting what is read with past experience, following directions, speed of reading, and other aspects of reading. Much space is devoted to training in word meaning and usage. The final part of the book is devoted largely to a valuable and well organized section on the pronunciation of words according to the keys given in dictionaries. Motivation is provided throughout the book by clever organization of the materials, by tests accompanying the exercises and by breezy comments which precede each section and by others interspersed along the way. Best of all is the fact that all reading selections have high interest value.

Teachers will be enthusiastic about and grateful for this text. Many adults also will undoubtedly profit incidentally by reading the materials and doing the exercises for fun and thereby improving their reading skills.

MILES A. TINKER
University of Minnesota

STANGER, M. A., AND DONOHUE, E. K. *Prediction and Prevention of Reading Difficulties* (New York: Oxford University Press, 1937), pp. ix + 191. $2.00.

In this book the authors avowedly and consistently attack the problems of diagnostic and remedial reading at the primary school level in line with Orton's cerebral dominance theory. Major emphasis is very properly placed upon prevention of disability. The definite problem is to discover prior to or early in the course of reading instruction those cases which need special help if they are to make satisfactory progress in reading. The material is presented from the teachers' point of view.

The exposition is in three parts: (1) theory, (2) testing, and (3) teaching procedure. The simplified description of the cerebral dominance theory is adequate. Although many are not ready to accept this theory, it does furnish a stimulating approach to reading disability. The tests advocated are simple, easily manipulated

and readily interpreted. They are designed mainly to discover confusion in lateral dominance.

The suggestions for remedial treatment are practical, simple and interesting. Basically the teaching procedure consists of promoting left to right progress in word perception. It may be characterized as a clever modernization of the A-B-C method of teaching reading by a judicious use of phonetics and kinesthesis. Throughout there is emphasis upon auditory, kinesthetic and visual reinforcement. It is one of the best organized teaching techniques that the reviewer has seen.

The methods in this book are obviously designed for children generally classified as non-readers. There are, however, many additional children in any school system who are retarded to some degree without becoming non-readers. To be adequately equipped for diagnostic and remedial work, therefore, the teacher will need additional knowledge of materials and methods. Whether or not she agrees with the cerebral dominance theory the teacher of remedial reading will find this book interesting and useful. Furthermore, the authors' experiences indicate that their techniques are highly successful. The text should be welcomed in the particular field for which it was written.

MILES A. TINKER
University of Minnesota

Official Report: American Educational Research Association. A Department of the National Education Association. St. Louis, Missouri, February 22-26, 1936. *Reconstructing Education Through Research* (Washington: American Educational Research Association, 1936), 301 pp. $1.50.

This volume includes 52 papers and abstracts of papers presented at the 1936 meeting of the American Educational Research Association. The title, which is intended to express the general theme of the program, suggests that the papers presented were expected to deal with the application of educational research rather than to report studies. The reviewer's classification placed only ten of the papers and abstracts under the head of "Reports of Research" or "Summary of Research." More liberal specifications in regard to what constitutes research would have increased this number, but it is obvious that this compilation of papers and abstracts should not be evaluated as an index of the amount or quality of educational research in the United States.

When the volume is examined with respect to the influence of educational research on educational practice, the picture is far from satisfying. Much more space is given to needs for research and to plans for studies than to questions implied by the title. Relatively few of the papers in the program of the meeting explicitly dealt with the influence of research on educational practice and none of them appears to have attempted a systematic inquiry relative to this question.

One can only speculate in regard to whether this condition is due to the failure of the authors of the papers and abstracts to attempt to contribute to the general theme of the program or to the difficulty of identifying the influence of research upon educational practice. The large investment in educational research during the past twenty-five years should now be paying dividends in the form of more efficient schools. If it is assumed that our schools are more efficient, there remains the question of the contribution of research. It is hoped that the American Educational Research Association will, in the near future, attempt a more explicit and complete appraisal of the

reconstruction of education through research.

W. S. MONROE
University of Illinois

Committee on Research of the Amos Tuck School of Administration and Finance, Dartmouth College. *Manual on Research and Reports: A Guidebook of Procedures Helpful in Conducting Investigations and Presenting Reports on Subjects in the Field of the Social Sciences* (New York: McGraw-Hill Book Company, 1937), pp. x + 140. $1.25.

TURABIAN, KATE L. *A Manual for Writers of Dissertations* (Chicago: University of Chicago Bookstore, 1937), pp. vi + 61. $.30.

BENBOW, JOHN. Manuscript and Proof: *The Preparation of Manuscript for the Printer and the Handling of the Proofs* (New York: Oxford University Press, 1937), pp. x + 118. $1.50.

BINKLEY, ROBERT C. *Manual on Methods of Reproducing Research Materials* (Ann Arbor, Michigan: Edwards Brothers, 1936), pp. xiv + 207. $3.50.

These four volumes are grouped together for brief review because of the fact that all deal primarily with aspects of the mechanics and form of reporting, publishing, and disseminating research materials.

The *Manual on Research and Reports* is an extended revision of the volume published by the same committee in 1931, although it is intended primarily for the beginner in the investigation of economic and social problems rather than for the experienced worker. The topics treated include: selection of the problem, library usage, gathering and organizing data, analysis and interpretation of data, preparation of the report, and procedures in publication. The value of the manual is in the possible service to undergraduate students rather than to the graduate or advanced worker who has access to comprehensive and specialized analyses of the methodology of research.

Turabian's manual, prepared primarily for candidates for higher degrees at the University of Chicago, should prove useful to students and writers in general. It draws many illustrations of form and style from the *Manual of Style* of the University of Chicago Press. The topics covered include: typing directions, format of the dissertation, quotations, footnote references, style, tables, illustrative materials, bibliography, rules of punctuation, and sample pages of a dissertation.

Benbow's handbook makes available to authors and editors the rules and conventions which should be observed in preparing a manuscript for publication and in handling proof. The topics treated are: the typing of manuscript, permission to quote, correcting and editing the manuscript for the printer, illustrative materials, indexing, reading and correcting proof, spelling, capitalization, punctuation, book format, and a glossary of terms. While the best informed and most experienced writers will find in the manual little that is new, such authors at present comprise only a minority group.

Binkley's manual on reproducing research materials is especially timely because of the discovery of new processes and devices which may have an influence in the intellectual world comparable with the invention of printing. To the typewriter and photostat have been added the planograph or photo-offset and miniature film copy. The handbook discusses: publishing and library costs for the book; printing costs and reprint costs; the typescript book on memorandum and reproduction techniques; blueprinting, photostating, and allied techniques; tabular and illustrative materials; paper permanence; binding, vertical filing, and film

storage; reduced-scale photographic and photolithographing copying on paper for reading through magnifying glasses; microcopying and projection reading; photographic and projection apparatus; and recording of sound. A final chapter sums up neatly the conclusions reached. The volume will be of most service to publishers, editors, authors, librarians, and others concerned with the publication, preservation, and dissemination of research materials.

CARTER V. GOOD
University of Cincinnati

LEVINE, ALBERT J. *Fundamentals of Psychologic Guidance: Mental Hygiene in the Service of School and Society* (Brooklyn: Educational Monograph Press, 1936), 96 pp. $1.00.

This stimulating little volume indicates that the author has had a profitable experience in the field of clinical psychology, and has done some keen thinking on its problems. The book opens with a discussion of the importance of individual adjustive guidance in education, and then outlines the procedures to be used. A section on "Accepted Therapeutic Procedures" describes various types of interviews that are useful. The long portion devoted to "Do's and Don't's for Counselors" is a compendium of positively stated suggestions based on clinical experience.

The psychological theories presented do not have any striking originality. In connection with the description of interview methods, a brief but clear and reasonable account of the theories of Freud, Jung, Adler and Rank are given. The conclusions of the author somewhat favor the Adlerian approach, although he cautions clinicians not to depend upon one method exclusively.

Any clinical psychologist will gain from reading Lavine's monograph. It may also be useful in classes for students of guidance or clinical psychology.

LAURANCE F. SHAFFER
Carnegie Institute of Technology

SMITH, MARGARET RUTH. *Student Aid: Bases of Selection of Students to Whom Loans, Scholarships, and Fellowships Are Awarded in a Graduate School of Education.* Contributions to Education, No. 704 (New York: Bureau of Publications, Teachers College, Columbia University, 1937), pp. vi + 152. $1.60.

The administration of student aids has become an important part of the academic program of all institutions of higher learning. This problem has become increasingly important in the graduate schools. Columbia University alone has distributed over one million dollars to students during the last five years. This has been in the forms of loans, scholarships, fellowships, and free tuition. In this study Miss Smith has attempted to answer such questions as the following:

1. What are the characteristics of the students who receive aid?
2. Were the selections well made as judged by subsequent careers?
3. What are the characteristics of the students who were rejected or did not apply for aid?

The data show quite clearly that the award group of students excelled the rejected group in at least three respects: (a) they were students in the institution before applying for an award; (b) they had a superior record of graduate points; and (c) they were resident in the college at the time the award was made. Marital status, membership in professional organizations, publications, research, and financial need were other factors showing small differences in favor of the award

group. Race, religion, and sex were some other factors that were studied. The data do not show that these factors played any definite role in the choice of candidates.

The study is worthy of careful study by any individual or committee that has the responsibility of administering loan or scholarship funds. The study is made from the experience of a graduate school, but its conclusions will apply in large measure to the under-graduate level as well.

CURTIS MERRIMAN
University of Wisconsin

GUILFORD, F. P. *Psychometric Methods* (New York: McGraw-Hill Book Company, 1936), pp. xvi + 566. $4.50.

The present volume is a comprehensive treatment of the application of statistical method to various problems in psychology. There are three parts or sections. The first deals with psychophysics, the second with methods of scaling psychological data, and the third with correlation and test methods. The book is written for the first year student who has had no mathematics beyond college algebra. The derivation of formulas is omitted throughout the book, emphasis being placed upon the practical application of statistical method to psychological data. Exercises and problems at the ends of the chapters add considerably to the teachability of the text.

That psychophysics is the author's major interest is shown by the fact that nearly one-half of the volume (Part I) is devoted to the psychophysical methods and related topics. Guilford's explanation of the traditional psychophysical methods, their history, background, uses, and pitfalls is unusually clear, and his illustrations are numerous and well-chosen. Part I, in the reviewer's opinion, is the best part of the book.

The methods of scaling test and other data are clearly—if somewhat scantily—treated. The reviewer feels that some attention might have been given to the scaling of educational tests; and that the illustration of scaling provided is rather trivial. Chapters X and XI (Part III) which deal with curve fitting and simple correlation, respectively, are excellently written. But Chapter XIII, mental test methods, is decidedly uneven in quality, especially in the treatment of item analysis. Certain other specific criticisms may be briefly indicated. The discussion of the reliability of differences (pp. 58-63) is not mathematically accurate though practically useful; the illustration of chi-square (pp. 91-92) contains an error in the use of the chi-square table; the meaning of the standard error of measurement (p. 414) is misinterpreted; the T-scale is summarily dealt with and inaccurately described (p. 439). Various minor errors appear in the text, their number being exceedingly small in view of the character of the book.

The final chapter in Part III presents the first discussion of factor analysis to appear in a textbook. The author, due to limitations of space and for other reasons, has presented only one factor method,—the centroid method of Thurstone. The very simplicity of exposition here is perhaps a real fault. The student who undertakes to apply the factor methods must know considerable mathematics if he is to understand the limitations of the factor methods and the assumptions upon which they rest. Oversimplification, unfortunately, may encourage the misuse of these techniques and their uncritical application.

Although excellent, on the whole, as a source book, "Psychometric Methods," in the reviewer's opinion, covers too much territory to be usable as a text in a single course. In most institutions, psychophysics is taught in courses in experi-

mental psychology, while scaling and correlational methods are taught in courses in statistics and mental measurement. It is doubtful whether the present book is entirely satisfactory as a text in courses in experimental psychology and psychophysics.

HENRY E. GARRETT
Columbia University

CHENOWETH, L. B., AND SELKIRK, T. K. *School Health Problems* (New York: F. S. Crofts and Company, 1937), pp. xii + 387. $3.00.

The materials as presented make the book particularly adapted for use by the school administrator, the school nurse, the health officer, and teacher-preparation classes in health education. The book gives a clear, concise and satisfactory statement of school health problems. Excellent descriptions are given of such matters as factors influencing child growth and development, administration of the health examination, control of communicable diseases, light and vision, acoustics and hearing, special classes for the handicapped, tuberculosis and the school child, mental hygiene, the accident problem, and the relationship of physical education to child health. One section on "School Health Administration" is particularly adapted to the public school administrator. It is highly documented, well organized and provided with an excellent glossary and index.

Upon reading this book one is continually aware of an adequate treatment of the age-old problem on the relationship between education and medicine. In no instance do the authors intend for the school physician to supplement the function of the family physician nor for the school house to become a hospital. Instead it emphasizes school health services as an educational procedure.

R. J. FRANCIS
University of Wisconsin

BENJAMIN, A. CORNELIUS. *An Introduction to the Philosophy of Science* (New York: Macmillan Company, 1937), pp. xvi + 469. $3.50.

There was a time when philosophy embraced the entire range of human problems and knowledge. In recent years there has been a strong tendency to assign almost exclusively to science the solution of all problems, leaving no place in a scientific world for the functioning of philosophy. It is wholesome, however, to find recent discussions in the fields of science in general, philosophy, and education which stress the complementary and supplementary contributions of philosophical and scientific procedures to problem solving.

Benjamin's purpose has been to write a supplement to a textbook on logic rather than a substitute for it. He has sought to acquaint the reader not so much with the facts of science as with the foundations or methods of science. The student of education probably will be most interested in the first two chapters which deal with the field of the philosophy of science, or, in other words, the relations between philosophical and scientific approaches. The author points out the fallacies of contemporary theories which assign exclusively to science factual and quantitative description and analysis, and to philosophy description and logical explanation of values and qualities, maintaining that the two approaches to problem solving are not mutually exclusive. The movement toward a philosophy of science has been accelerated by developments in the formerly complacent fields of mathematics and physics, and by the social impacts of science and invention. The major part of the book is devoted to what the author considers the three main problems of the philosophy of science: "(1) The ascertainment of the limits of the special sciences, of their integrations

one with another, and of their implications so far as these contribute to a theory either of the universe as a whole or of some pervasive aspect of it; (2) the critical examination of the method of science, of the nature of scientific symbols, and of the logical structure of symbolic systems; (3) the clarification of the basic concepts and postulates of the sciences, and the revelation of the empirical grounds (or absence of grounds) upon which they are presumed to rest."

The point of view expressed in this book, coming from a member of a department of philosophy (Chicago), is encouraging to those workers in education who have been emphasizing the similarities rather than the differences between so-called scientific and philosophical approaches. Every sound investigation requires use of the best theory and logic available in the evaluation of the problem, formulation of hypotheses, interpretation of data, and generalization. Another philosopher (Will Durant, *The Story of Philosophy*, p. 3) has said, "Science gives us knowledge but only philosophy can give us wisdom."

CARTER V. GOOD
University of Cincinnati

HAWKES, HERBERT E., LINDQUIST, E. F., AND MANN, E. R., EDITORS. *The Construction and Use of Achievement Examinations: A Manual for Secondary School Teachers.* American Council on Education (Boston: Houghton Mifflin Company, 1936), pp. vii + 497. $2.40.

Here is a book which escapes the usual fate of a collection of contributions by a number of writers. No "spottiness" is evident; the field is covered in a well-organized fashion.

The book is divided into three parts. Part I is devoted to a clear discussion of the problem of the identification and definition of the objectives to be measured, the theory of test construction, and a comprehensive outline of the procedure to be followed in constructing a test. Discussion of this last topic includes descriptions of a number of types of objective questions. For the statistically naïve, a step-by-step procedure is outlined for weighing equally the parts of an examination to get a total score. The method of assigning grades which is described in detail is open to the criticism that it involves assumptions (concerning the equivalence of scale units) which are as questionable as those involved in the simpler system it is intended to displace. However, in all fairness, it should be recorded that the writer cautions the reader against the blind use of any method of grading which involves relative standing within a small group; the point is implicitly made that judgment is a factor which cannot be displaced by statistical treatment in assigning grades.

The second part, which takes more than half the book, is concerned with a discussion of examinations in major subject fields. The social studies, the natural sciences, the foreign languages, mathematics, and English all come in for careful inspection in turn. Objectives appropriate to each field are outlined and sample questions in a variety of forms are presented.

Those who are looking for a whitewashing of the achievement test field will be disappointed; the third part of the book is devoted to a critical discussion of the uses and abuses of examinations. The rigid and indiscriminating enforcement of standards is given severe scrutiny. Educational guidance is stressed as the "emergent major function of examinations."

Well-constructed questions at the end of each of the nine chapters increase the

book's usefulness as a text—a use for which it is well suited. College or high school teachers seeking to improve their examinations will find it full of pertinent and practical suggestions. All in all, the contents of the volume are a happy combination of the theoretical and applied aspects of achievement testing.

G. FREDERIC KUDER
University of Chicago

RESEARCH ABSTRACTS and BIBLIOGRAPHIES

Address all communications relative to research abstracts and bibliographies to A. S. Barr, University of Wisconsin, Madison, Wisconsin.

BULLETINS

CARR, WILLIAM G. *Population Trends and Their Educational Implications,* Research Bulletin of the National Education Association, XVI, No. 1 (Washington: National Education Association, January, 1938), 59 pp.

This bulletin is devoted to a discussion of trends in population changes such as growth, internal movement, changes in composition, and problems arising; and to the educational implications of these changes insofar as they affect the methods and curriculum, guidance, school building program, the education of teachers, adult, urban and rural education, tax resources, school finance, and public relations of the schools. Statistical tables. Bibliography.

FERRELL, THOMAS. *Relation Between Current Expenditures and Certain Measures of Educational Efficiency in Kentucky County and Graded-School Systems,* George Peabody College, Contribution to Education, No. 216 (Nashville: George Peabody College for Teachers, 1936), 114 pp.

This monograph is the result of a five-year study on the relation between current expenditures for various school functions and certain measures of educational efficiency in county and graded-school systems. On the basis of the quantitative method, the author concludes that there is a close relationship between total current expenditures and educational efficiency in both types of school systems.

GATES, ARTHUR I., CHAIRMAN, AND OTHERS. *Special Methods and Psychology of the Elementary-School Subjects,* Review of Educational Research Bulletin, VII, No. 5 (Washington: American Educational Research Association, 1937), 158 pp.

This issue of the Review is devoted to a survey of the literature from July 1, 1934 to July 1, 1937 in the fields of arithmetic, art, character education, English language, health and physical education, music, reading, science, social studies, spelling, and activity programs in nursery school, kindergarten and elementary school. Bibliography.

GABEL, REV. RICHARD J. *Public Funds for Church and Private Schools* (Washington: The Catholic University of America, 1937), 859 pp.

This dissertation considers the question of public aid for private and church schools in the early colonial period, the early national period (1775-1820), the period of transition (1820-1865), and from 1865 to the present time. On the basis of a survey of the literature, the author concludes that the problem of religion in education is still unsolved. Bibliography.

MANWILLER, CHARLES E. *Reading Difficulties Continued,* Bulletin of the Pitts

burgh Schools, XII, No. 2 (Pittsburgh: Board of Education, November-December, 1937), 91 pp.

This bulletin is devoted to methods for improving reading and gives suggestions for remedial work in: addition of sounds, addition of words, careless work, comprehension, recognition of vowels and consonants, eye span, interest lag, language handicaps, memorization, manuscript writing, perception, omission of sounds, and omission of words. Bibliography.

MARSHALL, JAMES, AND MCCOOEY, MARGARET J. *Report and Recommendations of the Joint Committee on Maladjustment and Delinquency* (New York: Board of Education of the City of New York, January, 1938), 127 pp.

This bulletin presents the recommendations and a descriptive summary of the work of the New York City Schools and the inter-relationships of the schools and community agencies in dealing with the problems of maladjustment and delinquency.

Proceedings of the Third Annual Guidance Conference Held at Purdue University, Studies in Higher Education, XXXIII (LaFayette: Purdue University, Division of Educational Reference, January, 1938), 71 pp.

This bulletin is a compilation of the speeches given at the Guidance Conference held at Purdue University, November 19 and 20, 1937.

REID, CHARLES FREDERICK, EDITOR. *Compilation of Sources of Information on the Territories and Outlying Possessions of the United States, Series A* (New York: College of the City of New York, 1937), 37 pp. Mimeographed.

The first of the series of eight bibliographies on the Territories and Outlying Possessions of the United States is concerned with Guam; giving references in agriculture, anthropology, archaeology, bibliography, botany, census, civil service, commerce, communications, description and travel, disasters, education, forestry, general information, geography, government, health, history, hydrography, immigration, industry, legislation, maps, meteorology, military, miscellaneous, navigation, oceanic languages, periodicals, political economics, religion, social economics, sociology, statistics, surveys, and treaties.

REID, CHARLES FREDERICK, EDITOR. *The Status of Federal Control over Education in the Territories and Outlying Possessions of the United States* (New York: College of the City of New York, 1934), 19 pp. Mimeographed.

This bulletin is devoted to the author's speech delivered before the American Association for the Advancement of Science, at Pittsburgh in 1934; and in which he discussed the Federal control of Education in Alaska, Hawaii, Puerto Rico, Philippine Islands, Guam, American Samoa, Panama Canal Zone, Virgin Islands; and makes recommendations for improving the educational facilities in these countries.

SLETTO, RAYMOND FRANKLIN. *Construction of Personality Scales by the Criterion of Internal Consistency* (Minneapolis: The Sociological Press, 1937), 92 pp.

In an effort to investigate problems relating to the use of the criterion of internal consistency the author analyzed six scales designed to measure morale, feelings of inferiority, family adjustment, attitude toward law, economic conserva-

tism or radicalism, and attitude toward education. The author concludes that statistically significant discriminative values for all items in a scale do not assure that all items are measuring a single attitude.

CURRICULUM CONSTRUCTION

KOOS, LEONARD V., AND COLLABORATORS. "Selected References on Secondary-School Instruction, II, The Subject Fields," *The School Review*, XLVI (February, 1938), pp. 131-145.

This is a bibliography of articles appearing within the last year dealing with curriculum, methods of teaching, study, supervision, and measurement in the fields of English, the Social Sciences, Geography, Science, Mathematics, and Foreign Language.

RUSSELL, DAVID W. "Introducing Mathematical Concepts in the Junior High School," *School Science and Mathematics*, XXXVIII (January, 1938), pp. 6-19.

The author reviews a method for teaching functional arithmetic at the junior high school level as experimented with at the National College of Education, Evanston, Illinois.

ANITZ, R. H. "An Experiment in Coördinating the Courses in Methods and Supervised Teaching," *The Teachers College Journal*, IX (September, 1937), pp. 8-12.

The author discusses the Indiana State Teachers College experiment in attempting to coördinate the course in methods of teaching industrial arts and the courses in supervised teaching, and concludes that there were several results which point toward success in the experiment.

PUPIL GUIDANCE, WELFARE, AND DEVELOPMENT

PIERCE, PAUL R. "Reorganizing Extra-Curriculum Activities—A High School Program," *The School Review*, XLVI (February, 1938), pp. 118-127.

The author describes the extra-curriculum of the Wells High School, Chicago, Illinois, which aims in developing a program of activities particularly fitted to the interests and everyday living needs of the entire body of pupils.

STOLZ, HERBERT R. "Coöperation with Parents," *Understanding the Child* (January, 1938), pp. 14-18.

The author points out reasons for the lack of coöperation between parent and teacher, and then offers a number of practical suggestions to achieve better coöperation between both.

STATISTICS, MEASUREMENTS, AND SCIENTIFIC TECHNIQUE

MOORE, JOSEPH E. "A Test of Eye-Hand Coördination," *The Journal of Applied Psychology*, XXI (December, 1937), pp. 668-672.

The author presents data from a study of The Moore Eye-Hand Coördination Test and the Minnesota Rate of Manipulation Test gathered on 173 subjects, and concludes that the two tests seem to be measuring a common factor. There seems to be tendencies for speed to increase with age, and for girls to be more consistently faster than boys.

PINTNER, RUDOLF, AND FORLANO, GEORGE. "A Comparison of Methods of Item Selection for a Personality Test," *The Journal of Applied Psychology*, XXI (December, 1937), pp. 643-652.

The authors made a comparison of nine methods of item selection for a personal-

ity test, using four sub-tests and two populations of one hundred cases each; and data seem to indicate a fairly high agreement among the various methods in the assignment of such validity values.

NEW TESTS

CATTELL, RAYMOND B. *The Midland Attainment Tests; "F," Arithmetic, English*, London: University of London Press, January 24, 1938.

A general test; two arithmetic tests measuring knowledge of method and mechanical skill; and a series of tests in English measuring reading comprehension, vocabulary, grammar, and style, and knowledge of literature comprise this series, which may be used as a measure of achievement for groups or individuals. Manuals. Norms.

MCCALL, HERRING, AND LOFTUS. *A Comprehensive Test Program*, New York: Laidlaw Brothers, 1937.

Four tests suited for grades 3-9 measuring achievement, intelligence, educational background, and school practices comprise this test program; which aims to measure attitudes and habits as well as abilities and achievements.

MORT, PAUL R., SPENCE, RALPH B., ARNSPIGER, V. C., AND EADS, LAURA K. *Tests of the Socially Competent Person*, New York: Bureau of Publications, Teachers College, Columbia University, 1937.

These tests, suitable for grades 6-13, aim to measure the development of behavior in such areas of living as maintaining health, managing one's personal budget, being a member of a family or community, and enjoying leisure by utilizing the problem situation technique. Reliability of the total test for a single grade ranges from .83-.94 based upon about 300 cases per grade. Manual. Norms.

RESEARCH NEWS and COMMUNICATIONS

Address all research news and communications to Carter V. Good, Teachers College, University of Cincinnati, Cincinnati, Ohio.

Yearbook on Research and the Classroom Teacher.—This yearbook is still in the formative stages and probably will not appear until February, 1939. An exact title has not yet been selected.

The yearbook will have two major sections, or parts. The first part will deal with the place of research in the work of the teacher. Following the introductory chapter, which will stress the importance of research to effective work in present-day schools, there will be a chapter on the interpretation of research. The two remaining chapters in Part I will discuss: (1) the teacher as a research worker, and (2) the application of research in the solution of classroom problems.

The second part of the yearbook will consist of a series of chapters giving the major "implications," for teachers, of research in various fields of study. This part of the volume is being prepared by nationally-known educators. No attempt is made to summarize findings, except quite incidentally. Specific studies are almost never cited. Instead, each contributor attempts to set forth what he believes to be the most significant implications for teachers of all the research that has been done in a particular area. There will be chapters on such subject matter fields as the language arts, mathematics, social studies, science, the appreciational arts, etc. There will also be chapters of a more general nature, such as those on the learning process, and on child growth and development.

A joint committee is at work on the yearbook. Five of the members represent the Department of Classroom Teachers, and three, the American Educational Research Association. Hence, although the yearbook will be one of the series produced by the Department of Classroom Teachers, it is a project in which the A.E.R.A. is *actively* interested. Members of the Committee are: Myrtle Hooper Dahl, *chairman* (Minneapolis), Robert Clark (Philadelphia), Prudence Cutright (Minneapolis), William S. Gray (Chicago), Edna Greene (Kansas City, Missouri), Hilda Maehling (Terre Haute), Wilbur Raisner (San Francisco), and Paul Rankin (Detroit).

National Deliberative Committees.—The Educational Policies Commission of the National Education Association and the American Association of School Administrators has issued a 67 page annotated list of the deliberative committees in education which issued reports during 1937.

Study of Negro Youth.—A study to determine "What Effect the Minority Racial Status of Negro Youth Has Upon Their Personality Development," has been initiated by a special advisory committee for the American Youth Commission of the American Council on Education. The General Education Board of New York City will finance the inquiry through a grant of $110,000. Will W. Alexander, Farm Security Administrator

and a Commission member, is chairman of the committee, and Robert L. Sutherland, head of the division of social sciences, Bucknell University, is the director of the study.

Homer P. Rainey, director of the Youth Commission, states that while there are many data available on such aspects of Negro life as the deficiencies they face in education, the number of cases of delinquency, and the rent they pay on houses, there is almost a complete lack of information regarding the inner feelings of the Negro boy and girl as they encounter problems of race. By the case study method, data on the racial factor in the development of Negro personality will be sought through a consideration of the influence of segregation and isolation, the bearing upon personal stability of a narrow occupational horizon, and the effects of limitation of participation in civic and social activities. Personality inventories and attitude tests will be given to large numbers of individuals in different social and geographic environments. Two guidance centers will be established to which Negro youth will be invited to present their adjustment problems, in order that the advisory committee may know more of the difficulties faced by young Negroes as they reach the important period of transition between school and work. A general volume on the race factor and a series of monographs and popular brochures will be published during the progress of the study. The entire inquiry will require about two years' time.

Carnegie Foundation.—The annual report of the Carnegie Foundation for the Advancement of Teaching for the year ending June 30, 1937, discusses competition between colleges, selection of undergraduates, maladjustment in college, the years after college, professional accrediting and licensure, and pioneer graduate education.

W. S. Learned states that a student entering a Pennsylvania arts college in 1928 had about an even chance of finishing his four-year engagement. Dr. Learned has obtained and studied the opinions of 1,500 graduates of 49 Pennsylvania colleges on the value of their college education.

W. Carson Ryan, Jr., points out that with 18,000 Masters' or other first graduate degrees and over 2,800 Doctors' degrees granted by American colleges and universities in a single year, graduate education in the United States has departed considerably from the simple pattern of the third quarter of the nineteenth century.

For grants for 21 special research projects in education carried on at various universities and colleges in the United States and Canada during the year ended June 30, 1937, Carnegie Corporation of New York paid to the Division of Educational Enquiry of the Carnegie Foundation $106,700 which the Foundation disbursed. On June 30, 1937, the Foundation had resources of $28,843,010. During the preceding year it received $1,318,419.16 as income from interest and dividends on securities. It disbursed $1,999,558 on account of retiring allowances and widows pensions, $91,816 for studies conducted in its Division of Educational Enquiry, and $106,700 on grants for special research projects carried forward in American universities and by various bodies and associations.

Results of the Educational Finance Inquiry.—One result of the work of the Educational Finance Inquiry (1923) overshadows in its effects all other aspects of this or any other financial inquiry. This involves the meaning of equalization of educational opportunity in the American

setting. States had been struggling for fifty years to provide aid for poor districts. They had no fundamental definition of responsibility. They commonly placed the communities receiving aid in the position of recipients of charity. They attempted to rationalize their activities under the symbol of equalization of educational opportunity, but the term had only the vaguest meaning. It provided no adequate guide.

The Educational Finance Inquiry gave a positive definition of equalization of educational opportunity which demanded more far-reaching action than any state had taken. Fundamentally the American conception of education demanded that the people of the whole state take the responsibility for establishing a fair minimum of educational support with the burden distributed equally on the people in all localities. These demands were far more rigorous than any that had been made in the light of the old concept of equalization, although to a considerable degree the Educational Finance Inquiry had been anticipated a year or two earlier by Delaware, Maryland, and Pennsylvania. As a by-product of the clarification of the equalization principle, the Educational Finance Inquiry questioned the validity of reward-for-effort as a concept of importance equal to that of equalization. This set to rolling a line of investigation which carried through various state studies, and the National Survey of School Finance has resulted in a realization that underlying the reward-for-effort notion was a far-reaching principle that the state has the responsibility for making those provisions that would favor the continued adaptation of the program to changing needs. The financial implications of this underlying concept have driven educational finance into the problems of basic tax reform as a major problem in school finance.

It is reasonable to conclude that the clarification brought to these problems by the Educational Finance Inquiry was the largest single factor in the turning upward of the trend of state support. State support had lost ground from 1890 to 1920. About 1925 the trend turned upward and by 1935 it had recovered all the ground lost since 1890. It seems fair to say that the Educational Finance Inquiry played a highly significant part in the far-reaching step toward bringing about a fair minimum of education to all children and toward fundamental tax reforms necessary for the health of the educational system. In addition, it has provided a basis for an appraisal of the school finance structure of the nation which it may be hoped will soon bring about significant participation of the federal government in removing those defects of the structure which can only be removed by an agency operating for the people of the nation as a unit.

The National Survey of School Finance (1933) was chiefly useful in carrying out studies implied by the definition given by the Educational Finance Inquiry and in laying some of the ground work for their application to the federal financing of education.

This statement was prepared by Paul R. Mort of Columbia University, who has been active in this area of investigation.

Studies of School Buildings, 1934-37.—Since the issue of the Thirty-third Yearbook of the National Society for the Study of Education on the *Planning and Construction of School Buildings,* much significant literature on school buildings has appeared. Many schoolhouses have been built during this period with the entrance of factors affecting problems of planning in marked degree. The Public Works Administration has played a large

part in assisting communities in the development of buildings through its grants and loans. Significant studies analyzing the participation of the PWA are now under way. This federal organization has accomplished much through the services it has rendered local communities. It has set a very high standard for construction and the supervision of construction. It has brought about the development of superior specifications for buildings and has eliminated undesirable features of bidding and buying. Without doubt, partiality has been reduced to a minimum through the aid of the PWA. A study now under way by H. T. Herber of Malverne, N. Y., on the effect of the PWA upon school building planning and construction in New York State promises to be highly illuminating.

At the present writing practically all of the grants and loans that can be made through funds now available from the PWA have been publicly announced. Two very pertinent questions are raised with respect to future participation of the federal government in aiding localities in the erection of school buildings. One question is concerned with whether PWA assistance should be merely an aid to industry and labor during times of depression. The other question is whether the PWA should be used as one of the means of providing continued federal aid to localities.

It seems unwise to have federal aid distributed with a specific purpose in mind. The country's educators should interest themselves in a thoroughgoing study of the possible future directions in which the PWA type of assistance may be rendered to localities. Every effort should be made to safeguard the states and to recognize that they are in the best position to determine school building needs. The localities should certainly never be denied their rights of initiative and determination of the character of the buildings they wish built. No aid should be granted which penalizes the poor community and simply rewards the community which can readily carry its share of the financial burden.

The stress in the PWA procedure has been upon the legal, financial, and construction phases of school plant planning. In all future grants for buildings greater stress should be placed upon comprehensive school building programs developed for the purpose of determining school building needs. Not enough emphasis, unfortunately, has been placed upon this highly important phase of the program in the years past.

Also, not enough stress has been given to the adjustment of school buildings to curriculum needs. The work of Bruner, Caswell, Hopkins, Norton, and many other curriculum experts should be recognized as forming the basis for many school building decisions. The architects of this country should be encouraged to study the curriculum and to plan buildings which are truly functional in that they are highly adjusted to curriculum demands.

Russell A. Holy's study on *The Relationship of City Planning to School Plant Planning* (Bureau of Publications, Teachers College, Columbia University, 1935) treats in a comprehensive manner of another significant phase of educational planning. If schools and communities are to be highly integrated, the physical planning of community and school must be closely joined. The *Survey Manual for the Business Administration in Public School Systems* by N. L. Engelhardt and Fred Engelhardt (Bureau of Publications, Teachers College, Columbia University, 1936) emphasizes this need and makes possible the measurement of all the steps in school plant development which are being taken by city school departments.

Frank M. Misner's volume on *Extra Costs and Incidental Costs in the Erection of School Buildings* (Bureau of Publications, Teachers College, Columbia University, 1934) opens up an area of school plant planning concerning which relatively little has been written in the past. He lists the causes for "extra costs" and provides suggestions for ways and means of eliminating costs which are "extra" beyond the original contractual obligations. H. H. Punke, in his volume on *Courts and Public School Property* (University of Chicago Press, 1936) presents the legal problems involved in purchase and management.

Books from the foreign press which should be of great interest to those planning new school buildings are *Scoule* by Gaetano Minnuci (printed in Italy, but may be secured through the Architectural Book Publishing Company in New York City, 1936) and *Der Neue Schulbau* by Julius Vischer (Julius Hoffman, Stuttgart, Germany, 1931). These books, through description and photographs, indicate the progress that has been made in European schools, and the adaptation of plant to changing social and educational conditions. They provide a fine stimulus to workers who are initiating programs in school plant planning.

Studies are constantly coming from the press dealing with particular aspects of planning. The study by Mary de Garmo Bryan on *The School Cafeteria* (F. S. Crofts and Co., New York City, 1936) is a good illustration. It is exhaustive in its field. F. W. Luehring's contribution on *Standards for the Pool* is another study of this nature which will be published within the year ahead.

The American Educational Research Association, in a 1935 number of its *Review of Educational Research*, has brought together most of the references that are pertinent to the school building field as they appeared in book and periodical form. This Association will bring its reviews of building studies up-to-date in another volume to be issued in October, 1938.

The National Council on Schoolhouse Construction has each year issued valuable yearbooks covering the proceedings of its annual meetings. The work of this Council has proven to be highly significant in the improvement of school building conditions throughout the country. The United States Office of Education has also issued, with the assistance of the National Advisory Council on School Building Problems, a volume on the *Functional Planning of Elementary School Buildings* which will interest workers in this area.

During the period, 1934-1937, school building surveys have been made of various communities in which school building conditions and needs have been stressed. Outstanding among these surveys are those of Evansville, Ind., and Hartford, Conn., made by the Division of Field Studies of Teachers College, Columbia University; New Rochelle, N. Y., made by the New York State Education Department; and Cincinnati, O., made by the United States Office of Education. Also during this period many outstanding articles and results of researches have appeared in the Seventh, Eighth, and Ninth American School and University Yearbooks (American School Publishing Corporation, 470 Fourth Avenue, New York City), and in the monthly magazines, such as *American School Board Journal*, *School Executive*, *Nation's Schools*, *American Architect and Architecture*, and the *Architectural Forum*.

This is only a brief summary of the contributions made to the school plant literature during the period, 1934-1937. The list is by no means complete. As a whole, it appears that this group of years

will be considered a very significant period in American school plant history. The participation of the federal government in local building, alone marks the beginning of changes in planning which may have an unusual bearing upon the future.

This statement was prepared by N. L. Engelhardt of Columbia University.

California Studies. — The two studies described below are using the facilities of the Institute of Child Welfare of the University of California. The first is by David Morgan and the second by Elizabeth Carter.

The first study was undertaken for the purpose of investigating the inherent nature of individual differences in eye movements. The Oculo-Photometer was used for photographing the eye movements in reading, and the Betts' Ready to Read Tests for determining the visual efficiency of the sample. The reading material consisted of four paragraphs of prose, fifty words each, the first of the four being used as a practice card. The five measures of reading performance studied were rate of reading, progressions, regressions, fixations, and average pause duration. Initial regressions and regressions were considered separately. The sample comprised thirty-five pairs of identical and thirty-three pairs of fraternal twins selected from one hundred and two pairs in grades three through ten. A comparison group of forty pairs was formed by equating unrelated individuals on sex, C. A., reading age, I. Q., school, and grade in school. The reliability coefficients of all the measures, age constant, were above .90 with the exception of initial regressions and regressions within the line, .80 and .85 respectively. Low correlations were obtained between the various measures and age. In no case did the equated pairs show an intra-pair relationship greater than three times its probable error. On all the measures except regressive movements, both groups of twins yielded significant correlations. The significant coefficients, age constant, for the fraternal groups ranged from .46 to .60 and for the identical group from .47 to .71. The curves of pair differences revealed a similarity greater in the identical group than in the fraternal for rate of reading and average pause duration. Further evidence of the inherent nature of eye movements was found through a comparison of the general characteristics of the eye-movement patterns for the twin pairs.

In a second study, using the Interest Record developed by the Institute of Child Welfare, scores were obtained for three constellations of interests, designated as "intellectual-cultural," "mechanical-scientific," and "physical activity" interests. The data have been examined with reference to growth curves in a sample of urban school children tested annually for five years; the average age at the first test was eleven years. Comparisons have also been made with a rural group for whom cross-sectional data are available over the same age range.

Examinations in the Chicago Junior Colleges.—In order that all students may have the opportunity to secure a general education, the Chicago City Junior Colleges include in their curriculum survey courses in the following fields: biological science, English composition, the humanities, physical science, and social science. Measurement of achievement in these courses is accomplished by means of three-hour comprehensive examinations, published in the form of litho-printed booklets. These examinations, both objective and essay in character, are prepared by the Department of Examinations, with the coöperation of the faculties of the

survey courses of the Herz, Wilson, and Wright City Junior Colleges. They are given simultaneously in each of the three colleges, and are proctored by members of the faculties concerned. The papers are scored under the supervision of members of the staff of the Department of Examinations. Graduates of the Chicago Normal College score the objective exercises, and graduate students of neighboring universities score the essay questions.

The comprehensive examinations are administered at the end of each semester and at the opening of school in September. The score on an examination determines the mark of the student for his year of study in the given survey field. If his score is unsatisfactory, he may take another examination in that field whenever the comprehensive examinations are scheduled to be given.

Exemption tests in English, biological science (two), and physical science are administered on the first day of registration of each semester to all entering students and registered students who desire to secure some degree of acceleration with respect to the survey courses. This privilege is particularly helpful to pre-professional students, because they are enabled to take more elective courses in the fields in which they desire to specialize. Superior achievement on one of these examinations exempts a student from one of the two semesters of the given survey course. He must, however, take the comprehensive examination in the field. For this reason, he is advised to engage in independent study of the subject matter covered in the course from which he has been excused. He may read the syllabus, study the texts, or voluntarily attend the lectures. Registration in other courses in the field will also help him.

An annual report on the examinations is prepared by Max D. Engelhart, who is in charge of this work.

Studies at Indiana University. — The School of Education at Indiana University has carried on a number of research projects during the year, 1936-37. A few of these have already been published as bulletins of the School of Education, while others are still in the process of completion.

In March, 1937, a bibliography of more than 3,500 references was published dealing with literature on education in countries other than the United States of America (January 1, 1925, to December 31, 1935). A supplement to this bibliography, including approximately 1,200 references which appeared between January 1, 1919, and December 31, 1924, was published in December, 1937.

Another bibliography to be published in the near future is a supplement to the one on school surveys and references on school surveys issued in 1931. This bulletin will list those references which appeared between 1931 and 1937.

The School of Education has also continued its work in the field of character education, and in June, 1937, published a bulletin entitled "Character Development through Religious and Moral Education in the Public Schools of the United States." This study presents the need for character education, discusses its present status in the public schools of the country, lists the objectives to be sought, and suggests methods of developing character.

Several research projects are in progress at the present time. These include three which are not yet ready for publication: (1) a study made in coöperation with the National Institutional Teacher Placement Association to discover bases for improving the facilities of non-profit teacher selection and placement; (2) a study of out-of-line and unadjusted school children in Monroe County; and (3) an analysis of the content of four-year

courses for the training of elementary teachers. An attempt to determine the content of courses in the introduction to teaching, and the first step of an analysis of factors affecting efficiency in addition, were presented at the Twenty-fourth Annual Conference on Educational Measurements (Indiana University) in April, 1937, and are printed in the proceedings of that conference.

As usual, the Bureau of Coöperative Research, connected with the School of Education, has assisted the state each semester in the development of the state high school examinations.

This information was provided by Dean H. L. Smith.

Kentucky Projects. — The Bureau of School Service of the University of Kentucky is a service organization of the College of Education. Its purpose is to conduct original investigations, and to render special services to educational agencies. The Bureau publishes four bulletins a year, which include reports of surveys and special investigations, proceedings of educational conferences, and other materials thought to be of value to the schools in the solution of their problems.

During the current year the Bureau has engaged in two major projects. First, it has completed a study of a plan for teacher-retirement in Kentucky, and drafted a proposed teacher-retirement law for the state of Kentucky. This service was rendered at the request of the board of directors of the Kentucky Education Association, which has chosen the enactment of a sound teacher-retirement law as its major objective for the ensuing year.

The second major project has been an investigation of the proportion of men and women engaged in the teaching profession in the United States and foreign countries, and a summarization of some of the issues that have arisen in regard to women teachers. This study consists of two parts. The first is statistical in character, presenting the data concerning the distribution of teaching positions between men and women and pointing out the trends which have been in evidence in the United States and other countries over a period of years. The second part of the study reviews the literature on such issues as: (1) the relative efficiency of men and women teachers, and the possible effects on the school and its products of a teaching staff primarily feminine; (2) the effect of over-feminization within the teaching profession upon the salaries of teachers, and some of the problems of salary scheduling with respect to the sexes; and (3) the problem of the married woman teacher. The study makes no attempt to draw definite conclusions on the questions involved, except in a few cases where factual information is available. It was published as a bulletin of the Bureau of School Service under the title, *Women and Men in the Teaching Profession*, Vol. IX, No. 3, March, 1937.

The Bureau has also published during the current year a study on *The Influence of Court Decisions in Shaping the Policies of School Administration in Kentucky*, and an annotated bibliography of *Theses in Education*, University of Kentucky. During the current school year a report of a study on *Negro Education at the Elementary and Secondary Levels in Kentucky* will be published.

Teaching and the Evidence. — The Michigan Department of Public Instruction has published a statement of the implications of educational research for teaching in the elementary school under the title of "What Does Research Say?" The topics covered include: child development, individual differences, personal and

social relationships, materials and methods of instruction, records and reports, classification and promotion of pupils, arithmetic, expression, the arts, health and physical education, safety education, reading and literature, science, social studies, character education, and activity programs. Paul T. Rankin of the Detroit Schools was chairman of the committee which prepared the bulletin.

Minnesota Committee on Research.—The Committee on Educational Research of the University of Minnesota is a university-wide committee appointed by the president to conduct studies of educational problems in the institution. The Committee has been in existence since 1924. In 1922 President L. D. Coffman appointed a Committee on Educational Guidance. Two years later this group, in making its report to the president, recommended that he appoint an Educational Research Committee to promote the investigation of educational problems within the university. It was suggested that such an agency should not "have administrative functions but should be for the purpose of investigation, experimentation, publicity, and coöperation among administrative agencies now existing."

Dean M. E. Haggerty of the College of Education was Chairman of the original Committee on Educational Guidance, and from its organization to his death in October, 1937, was Chairman of the University Committee on Educational Research. It was through his distinguished leadership and guidance that the extensive program of research on the university's problems was conducted. Not only was his service of exceptional value to his own institution, but it also stimulated other colleges and universities to study their educational problems objectively and gave impetus to the rapidly expanding field of research in higher education. After Dean Haggerty's death, T. R. McConnell, Professor of Educational Psychology, was appointed Chairman of the Committee.

The studies of the Committee may originate in the administrative offices of the university or any of its divisions. An outline of the proposed investigation is submitted to the Committee, which in turn evaluates the request and, if it seems feasible, recommends it to the president of the university for approval and financial support. The projects are conducted in coöperative fashion. In most instances a guiding committee is formed from members of the University Committee on Educational Research and staff members of the division of the university concerned. Some one person from the Committee, the College of Education, or other division of the institution usually acts as the director of the investigation, which is often conducted with the aid of graduate students employed as research assistants. Practically all the major divisions of the university and many of the departments have coöperated with the Committee on its studies. The participation of graduate students in the program has enabled them to secure valuable training in the field of higher education. Either through the Committee itself, the office of the president of the university, or the University of Minnesota Press, many monographs and books have been published embodying the results of the research. One of the most important outcomes, however, has been a growing interest on the part of the members of the university staff in the systematic investigation of educational problems.

In summary the following functions of the Committee may be outlined:

1. To act as a coördinating agency for

all studies in higher education in the university.

2. To encourage the colleges and departments to propose for investigation problems of particular importance to them.

3. To propose investigation of problems of university-wide import.

4. To evaluate the promise of all studies proposed, and to recommend the most desirable ones to the president of the university for approval and financial support.

5. To evaluate as far as possible the results of the research completed under the auspices of the Committee.

6. To devise plans for acquainting the proper personnel of the university with the results of the studies and the application of the findings.

7. To arrange for publication of those studies which may warrant general distribution.

8. To stimulate interest of the faculty in problems of higher education and in a systematic study of them.

9. To interest itself in the training of personnel for higher education.

The following projects are under way at the present time:

1. Studies in construction and evaluation of examinations which have been conducted in coöperation with the General College of the university for several years are being continued. Among the specific problems involved in this program are those which have to do with the measurement of growth, the measurement of retention, the development of examinations for measurement of different objectives of instruction, the contribution of certain course sequents in growth and ability to think critically, and other minor studies.

2. The development of an instrument to measure growth in student expository writing.

3. Experimental examination studies in coöperation with the Departments of Mathematics, Mechanical Drawing, and Zoology.

4. Studies of the manner in which the results of examinations may be used for instructional purposes.

5. An experiment to evaluate student drawings in the Department of Zoology in the light of their contribution to certain learning outcomes.

6. A curriculum study in coöperation with the Department of Forestry of the College of Agriculture, Forestry, and Home Economics.

7. The Board of Admissions is drawing to a conclusion a series of studies in the prediction of student achievement in the following divisions of the university: School of Nursing, School of Medicine, College of Dentistry, School of Pharmacy, Law School, College of Education, School of Business Administration, College of Engineering, School of Architecture, General College, College of Science, Literature, and the Arts, and the College of Agriculture, Forestry, and Home Economics.

8. A study begun in 1935, in coöperation with the Department of Physical Education and Athletics, of physical education and related recreational activities in two Minnesota communities is being completed.

9. A study of the relationship of certain prerequisite science courses to achievement in sequent courses in home economics.

This information was provided by T. R. McConnell, Chairman of the Committee on Educational Research.

Philadelphia Research. — During the past year the Philadelphia Schools have been in the process of being surveyed by a committee of educators under the direction of George A. Works of the Univer-

sity of Chicago. The survey recommends an enlargement of the Division of Research and an increase in its functions to include curriculum, buildings, and business research, as well as instructional research.

Elementary Achievement Testing Program.—Because of the importance of adequate diagnosis of pupil needs, the Division has conducted during each term of the past year, as in previous years, city wide testing programs in skill subjects in the elementary schools. The programs are so organized that one or more city wide tests are being applied during each month of the term.

During each of the past two terms these tests have included handwriting, arithmetic fundamentals, and spelling in grades two to six inclusive, reading in grades one to six, study skills in grades five and six, and arithmetic problems in grades three to six. Bulletins interpreting the results of these programs have been issued and widely discussed among teachers and principals. Test records for each individual pupil have been preserved on his permanent cumulative test record card for purposes of educational guidance.

Test Construction. — The program of calibrating Philadelphia tests with nationally standardized tests has been continued. Alternative forms have been constructed for the Philadelphia Map, Table, and Graph Reading Test and the Philadelphia Outlining Test. Three forms of an English usage test for grades seven and eight have been prepared. Construction of new tests has included the completion of the Philadelphia Primary Mental Ability Test after a period of experimentation extending over four years. The new test includes two pages of word matching, three pages of word classification, and two pages of arithmetic problems, administered orally. A reliability coefficient of .90 and a validity coefficient of .83, yielded from the comparison with criterion scores composed of reading, spelling, and arithmetic problems and fundamentals, indicate that the test is a highly predictive instrument. The Philadelphia Grade 1A Mental Ability Test was used for the first time on a city wide basis in the fall of 1937. Data from this test in experimental forms indicate that it correlates highly with the Metropolitan Readiness Test and the Kuhlman Anderson Intelligence Test and that its predictive value in estimating first grade success is higher than that of either of these tests. Comparisons are now being secured with the Monroe Reading Aptitude Test and the Detroit First Grade Intelligence Test. The progress of individual pupils will be studied to determine the predictive value of the Philadelphia test. An attempt will be made to develop comparative standards, so that the results of the test taken in conjunction with other data may be used to decide whether pupils should be given a program designed to develop "readiness" for reading or a program of reading instruction.

Administration of Mental Ability Tests.—Mental ability tests are administered semi-annually in grades 2B, 4A, 4B, 6B, 8B, and 9B. Not only have the mental ability tests provided a useful aid in the classification and educational guidance of individual pupils, but they have also provided a means of studying differences and changes in ability levels for the city and given schools. Significant findings have been noted in mental ability bulletins.

An estimated 74 percent of grade 4A pupils have been retained to grade 10A. During the same period only 26 percent of the pupils with I.Q.'s below 85 have been retained. Hence the elimination of pupils affects markedly the low I.Q. group. The proportion of I.Q.'s below 85 is approximately only three-fifths as

great in grade 10A as in grades 8B and 9B. One reason for this is the rapid elimination of low I.Q. pupils after their promotion to senior high schools from 8B elementary schools. Dismissals for overage continue at a rapid but reduced rate in grade 10, many of them during the early part of grade 10A.

A significant aspect of the large number of overage dismissals in senior high schools is seen in the fact that it is difficult for pupils from 16 to 18 years of age to obtain employment. According to the figures in regard to first general employment certificates issued for 16 and 17 year olds, it may be estimated that more than 80 percent of these young people become "unemployed" when they are dropped from the school rolls. Further evidence of the seriousness of the elimination of these 16 and 17 year olds from school is found in the fact that most work openings are for the group over 18 years of age. During the year ended June, 1936, 78 percent of all placements of the Junior Employment Service were for persons over 18. A recent new law in Pennsylvania will, after September, 1939, require all pupils except those usefully employed and high school graduates to remain in school until 18. The data indicate, therefore, the necessity for curriculum planning for low I.Q. groups.

Personality Tests.—During the present term a study is being made of available tests, and of suggestions for building tests and developing adequate observational techniques for the measurement of personal habits, attitudes, and interests. As a result of this study, experimentation will be initiated with a view to securing valid and reliable measuring instruments in these traits.

Junior and Senior High School Promotions.—In junior and senior high schools, subject promotion rates have remained unchanged, although there have been important changes in enrollment. These enrollment changes include increases in the upper grades of the senior high schools and decreases in the lower grades of the junior high schools; non-academic curriculum enrollments are greatly increased. A continuing study of the success of pupils with I.Q.'s lower than 85 for the three year period of their enrollment in grades 10-12 shows that 11 percent graduated with normal progress and that promotion rates in art, home economics, and industrial arts subjects were comparable with those of other pupils. On the other hand, rates of success in foreign languages, mathematics, English, social studies, and science are so low as to indicate that enrollment in these subjects as now organized is of questionable value. A comparison of subject promotion rates in the senior high schools of 15 cities of 100,000 population and over shows a total senior high school subject promotion rate of 89 percent based on the records of approximately 500,000 pupils. A similar study for the junior high schools of 11 cities shows a total promotion rate of 95 percent. A special study of promotion rates in junior high schools in relation to test achievement for various I.Q. levels shows that there is apparently no clear-cut evidence that teachers with low promotion rates obtain higher levels of achievement.

Coöperative Test Service Program.—Voluntary programs using Coöperative Test Service material were administered in grades 9-12. In June, 1937, over 3000 of the tests were scored upon the recently developed I.B.M. test scoring machine. The cumulative results of these tests show high achievement in chemistry, physics, and the later terms of foreign language. The pupils selected for these programs are of relatively high I.Q.

English Compositions.—An analysis of pupils' compositions in senior high school

shows a relatively large number of mechanical errors in the writing of the pupils. There is a significant amount of disagreement in error counts even with competent scorers, i.e., high school teachers of long experience, trained to apply common definitions of error.

Survey of Building Needs.—During the past year a survey has been made of high school accommodations with a view to the maximum utilization of school buildings, resulting in the prevention of overcrowding in those schools where the pressure of increased enrollment has been heavy. At present the study is being continued to include studies of population and enrollment trends, in order to secure a satisfactory basis for the building program.

Other Projects.—Class size and teaching loads have been analyzed for junior and senior high schools. Results of testing programs in geometry, modern history, American history, chemistry, and reading have been used in pupil guidance and remedial instruction.

This information was forwarded by Philip A. Boyer, who is in charge of the Research Division.

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